THE FOUNDATION FOR SECURE MARKETS

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July 18, 2019

VIA ELECTRONIC MAIL
Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, DC 20581

Re: Rule Filing SR-OCC-2019-004 Rule Certification

Dear Secretary Kirkpatrick:

Pursuant to Section 5c(c)(1) of the Commodity Exchange Act, as amended ("Act"), and Commodity Futures Trading Commission ("CFTC") Regulation 40.6, enclosed is a copy of the above-referenced rule filing submitted by The Options Clearing Corporation ("OCC"). The date of implementation of the rule is at least 10 business days following receipt of the rule filing by the CFTC or the date the proposed rule is approved by the Securities and Exchange Commission ("SEC") or otherwise becomes effective under the Securities Exchange Act of 1934 (the "Exchange Act"). This rule filing has been submitted to the SEC under the Exchange Act.

OCC has requested confidential treatment for Exhibits 3 and 5A - 5C to SR-OCC-2019-004 (contained in pages 47-121 of SR-OCC-2019-004).

In conformity with the requirements of Regulation 40.6(a)(7), OCC states the following:

Explanation and Analysis

The purpose of this proposed rule change is to modify OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description to introduce a risk-based liquidation charge based on bid-ask spreads to adjust the value of positions to account for the costs of liquidating a defaulting Clearing Member's portfolio.

The proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description are contained in confidential Exhibits 5A - 5C of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included a summary of impact analysis of the proposed model changes in confidential Exhibit 3. The proposed changes are described in detail

below. All terms with initial capitalization that are not otherwise defined herein have the same meaning as set forth in the OCC By-Laws and Rules.[1]

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"), is OCC's proprietary risk management system that calculates Clearing Member margin requirements.[2] STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[3] The STANS margin requirement is calculated at the portfolio level of Clearing Member legal entity marginable net positions tier account (tiers can be customer, firm, or market marker) and consists of an estimate of a 99% 2-day expected shortfall ("99% Expected Shortfall") and an add-on for model risk (the concentration/dependence stress test charge). The STANS methodology is used to measure the exposure of portfolios of options and futures cleared by OCC and cash instruments in margin collateral.

STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. The base component of the STANS margin requirement for each account is obtained using a risk measure known as 99% Expected Shortfall. Under the 99% Expected Shortfall calculation, an account has a base margin excess (deficit) if its positions in cleared products, plus all existing collateral - whether of types included in the Monte Carlo simulation or of types subjected to traditional "haircuts" — would have a positive (negative) net worth after incurring a loss equal to the average of all losses beyond the 99% value at risk (or "VaR") point. This base component is then adjusted by the addition of a stress test component, which is obtained from consideration of the increases in 99% Expected Shortfall that would arise from market movements that are especially large and/or in which various kinds of risk factors exhibit perfect or zero correlations in place of their correlations estimated from historical data, or from extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.[4] STANS margin requirements are intended to cover potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation costs OCC may incur in closing out a defaulted Clearing

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1 OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

2 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20). A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

3 See OCC Rule 601.

4 STANS margins may also include other add on charges, which are considerably smaller than the base and stress test components, and many of which affect only a minority of accounts.

Member's portfolio.[5] Closing out positions in a defaulted Clearing Member's portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads.

Proposed Changes

OCC is proposing to enhance its margin methodology by introducing a new model to estimate the liquidation cost for all options and futures, as well as the securities in margin collateral. As noted above, closing out positions of a defaulted Clearing Member in the open market could entail selling longs at bid price and covering shorts at ask price. These closing-out costs are currently not taken into account in STANS for all options (with the exception of long-dated SPX index option series, as noted above).[6] Therefore, the purpose of the proposed change is to add additional financial resources in the form of margin, based on liquidation cost grids calibrated using historical stressed periods, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios in the event of a default. The liquidation cost charge would be applied as an add-on to all accounts incurring a STANS margin charge.

The proposed liquidation cost model calculates liquidation cost based on risk measures, gross contract volumes and market bid-ask spreads. In general, the proposed model would be used to calculate two risk-based liquidation costs for a portfolio, Vega[7] liquidation cost ("Vega LC") and Delta liquidation cost ("Delta LC"), using "Liquidation Grids."[8] Options products will incur both Vega and Delta LCs while Delta-one[9] products such as futures contracts, Treasury securities and equity securities, will have only a Delta charge.

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5 A liquidation cost model was introduced into STANS in 2012 as part of OCC's OTC clearing initiatives. The model is only applied to long-dated options on the Standard & Poor's ("S&P") 500 index ("SPX") that have a tenor of three-years or greater. See Securities Exchange Act Release No. 34-70719 (October 18, 2013), 78 FR 63548 (October 24, 2013) (SR-OCC-2013-16). The existing liquidation model for long-dated SPX options would be replaced by this new model. OCC currently does not have any open interest in OTC options. OCC does currently clear similar exchange traded long-dated FLEX SPX options; however, these options make up less than 0.5% of SPX options open interest.

6 Id.

7 The Delta and Vega of an option represent the sensitivity of the option price with respect to the price and volatility of the underlying security, respectively.

8 "Liquidation Grids" would be comprised collectively of Vega Liquidation Grids, Vega Notional Grids, Delta Liquidation Grids, and Delta Notional Grids. Liquidation Grids are discussed in more detail below in the *Creation and Calibration of Liquidation Grids* section.

9 "Delta one products" refer to products for which a change in the value of the underlying asset results in a change of the same, or nearly the same, proportion in the value of the product.

The proposed liquidation cost model described herein would include: (1) the decomposition of the defaulter's portfolio into sub-portfolios by underlying security; (2) the creation and calibration of Liquidation Grids used to determine liquidation costs; (3) the calculation of the Vega LC (including a minimum Vega LC charge) for options products; (4) the calculation of Delta LCs for both options and Delta-one products; (5) the calculation of Vega and Delta concentration factors; (6) the calculation of volatility correlations for Vega LCs; (7) the establishment of a STANS margin floor based on the liquidation cost; and (8) conforming changes to OCC's Margin Policy and Stress Testing and Clearing Fund Methodology Description.

The new liquidation cost model would cover the following cleared products in a Clearing Member's portfolio: options on indices, equities, Exchange Traded Funds ("ETFs") and futures; FLEX options; future contracts; Treasury securities; and stock loan and collateral securities. The securities not included in STANS margin calculations would not be covered by the new model. The proposed approach to calculating liquidation costs and the conforming changes to OCC's Margin Policy are described in further detail below.

1. Portfolio Decomposition and Creation of Sub-portfolios

For a portfolio consisting of many contracts and underlyings, the proposed model would first divide (or decompose) the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio. The Vega LC and Delta LC are first calculated at a sub-portfolio level and then aggregated to derive the final liquidation cost for the total portfolio. All the option positions with the same fundamental underlying would form one sub-portfolio because they share the same risk characteristics. The equity index, index future and index ETFs would all be categorized by the underlying index that is the basis for the index, future, and ETF-underlying securities. The corresponding options on the index, index future, and ETFs would therefore fall into the same sub-portfolio. In addition, FLEX options on the same underlying would be included in the same sub-portfolio of the regular options. Similarly, cash products such as equities and futures would be grouped in the same sub-category based on their underlying symbols. All Treasury security positions would form one sub-portfolio. The calculation of Vega LC and Delta LC for each sub-portfolio is summarized in the next sections.

2. Creation and Calibration of Liquidation Grids

A key element of the proposed liquidation cost model is the "Liquidation Grids." The calculations of Vega LC and Delta LC involve a number of liquidity-related quantities such as volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional. The collection of these quantities would be used to create the following Liquidation Grids.

1. Vega Liquidation Grids (or volatility grids): the Vega Liquidation Grids would represent the level of bid-ask spreads on the implied volatility of option contracts for a given underlying. Since the volatility spreads of option contracts vary by the Delta and tenor of the option,

OCC would divide the contracts into several Delta buckets by tenor buckets.[10] Each pair (Delta, tenor) is referred to as a Vega bucket. For each bucket, an average volatility spread is estimated and defined as the volatility grid for the bucket. The size of grid would essentially represent the cost for liquidating one unit of Vega risk in the bucket.

2. Vega Notional Grid: the Vega Notional Grid of an underlying security would be the average trading options volume weighted by the Vega of all options on the given underlying. The size of Vega Notional grids would indicate the average daily trading volume in terms of dollar Vegas (i.e., the Vega multiplied by the volume of the option).

3. Delta Liquidation Grid: the Delta liquidation grid would represent an estimated bid-ask price spread (in percentage) on the underlying.[11] It represents the cost of liquidating one dollar unit of the underlying security. The Delta liquidation grid for Treasury securities represents bid-ask yield spreads, expressed in basis points.

4. Delta Notional Grid: the Delta Notional grid of an underlying security would represent the average trading volume in dollars of the security.[12]

Vega Notional Grids are calibrated at the security level; that is, each individual underlying security would have its own Vega Notional. The Delta Notional Grid and both Vega and Delta Liquidation Grids for all underlying securities are estimated at the levels of a fixed number of classes based on their liquidity level.[13] All equity securities would be divided, based on their

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[10] Initially, Vega Liquidation Grids would consist of 5 Delta buckets by 5 tenor buckets, with a total of 25 pairs; however, the Vega Liquidation Grids would be reviewed annually or at a frequency determined by OCC's Model Risk Working Group ("MRWG") and updated as needed as determined by the MRWG. The MRWG is responsible for assisting OCC's Management Committee in overseeing and governing OCC's model-related risk issues and includes representatives from OCC's Financial Risk Management department, Quantitative Risk Management department, Model Validation Group, and Enterprise Risk Management department.

[11] Delta Liquidation Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the cost of liquidating one dollar unit of the underlying security. The Delta Liquidation Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

[12] Delta Notional Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the average trading volume in dollars of the underlying security. The Delta Notional Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

[13] Within the same liquidity group, the Vega Notional can vary dramatically from name to name. Moreover, Vega risk can be much greater than Delta risk. As a result, OCC would calculate Vega Notionals at the security level as opposed to the liquidity level.

membership in commonly used market indices (including, but not limited to, the S&P 100 and 500 index) or other market liquidity measurements, into liquidity classes (which may include, but are not limited to, High Liquid Equities, Medium Liquid Equities and Low Liquid Equities). Any new equity security would generally default to the lowest liquidity classification unless otherwise assigned to a higher liquidity classification when deemed necessary. Major indices (e.g., SPX or the Cboe Volatility Index ("VIX")) may form their own index liquidity class, which may cover indices, index ETFs, and index futures. In addition, sector ETFs, ETFs on a major commodity (such as Gold, Crude/Natural Gas, Metals, and Electricity), and Treasury ETFs would generally each form individual classes of their own, subject to the availability of liquidation data. Pursuant to the proposed Margins Methodology, these liquidity classes would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed, taking into consideration such factors including, but not limited to, changes in membership of the S&P 100 index and S&P 500 index, listing and delisting of securities, and any corporate actions on the existing securities.

Because the bid-ask spreads can change daily, the use of spreads from current market conditions could cause liquidation costs to fluctuate dramatically with market volatility, especially during a stressed market period. To mitigate this procyclicality issue, Liquidation Grids would be calibrated from several historical stressed periods, which are selected based on the history of VIX index levels and would remain unchanged with time until a new stressed period is selected and added to the calibrations in accordance with the requirements of the proposed Margins Methodology.[14]

3. Vega Liquidation Cost

Vega Liquidation Cost Calculation

Vega LC is the main component of the proposed liquidation cost model. For a simple option contract, the Vega LC would be its position Vega multiplied by its respective bucket in the Vega Liquidation Grid. The result is approximately equal to one half of the bid-ask price spread. For a portfolio consisting of many contracts and underlyings, the model first divides the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio (as described above). The Vega LCs for sub-portfolios are calculated first and then aggregated to derive the Vega LC for the total portfolio.

The Vega LC for a sub-portfolio, which consists of all the contracts with the same underlying security, would be calculated in several steps. First, the Liquidation Grids would be calibrated for Vega "buckets" that consist of Delta bins by tenor bins as discussed above. These Vega buckets are used to represent the volatility risk at the different areas on the implied volatility surface. Next, the Vega of each contract position in a given sub-portfolio would be calculated and bucketed into one of the Vega buckets. The Vegas falling into the same Vega bucket would then be netted. The Vega LC for each of the Vega buckets is calculated as the net Vega multiplied by the Vega grid of the

[14] The Liquidation Grids will be reviewed annually or at a frequency determined by the MRWG.

buckets. Finally, the total liquidation cost for the sub-portfolio would be aggregated from these bucket Vega LCs by using correlations between the Vega buckets. Since the sub-portfolios are formed by the fundamental equity or index underlying the option, the Vega LCs of closely related but different underlying securities are allowed to net. For example, Vega LCs for SPX and related indices, futures, and ETFs that are based on the S&P 500 index would be allowed 100% netting.

The Vega LC for the total portfolio would be a similar correlation-based sum of Vega LCs of all the sub-portfolios, taking into account correlations between the products' implied volatility.[15]

Minimum Liquidation Cost

Because the proposed model allows risk netting across closely related option contracts, it is possible that a well-hedged option strategy could result in a very small or zero liquidation cost. To prevent this from happening, a minimum liquidation cost would be introduced to the Vega liquidation charges. The minimum liquidation cost for a sub-portfolio would be calculated as the gross number of option contracts multiplied by a minimum cost per contract value.[16] The minimum cost amount would be calculated for the entire portfolio and would be used to floor the final total Vega LC. The proposal would not apply a minimum cost for Delta LC due to the immaterial impact a minimum Delta LC would have on the overall liquidation cost charge.

4. Delta Liquidation Cost

In addition to Vega risk, the model also considers the Delta risk presented in an entire portfolio. If a portfolio has positions in either options, futures, equities, or Treasury securities, it will contain some Delta risk. Under the proposed model, the liquidation cost due to Delta risk in a sub-portfolio (as defined by the underlying) would be approximated by the net dollar Delta of the sub-portfolio multiplied by its respective bucket in the Delta Liquidation Grid.
The proposed model would allow netting of Delta LC if the option contracts, futures, or equity positions belong to or are related to a top index (such as SPX or VIX). For example, in a portfolio, positions in SPX-related options, options on futures, futures, or collateral have their Delta LC netted.

Under the proposed model, U.S. dollar Treasury bonds would form one sub-portfolio. The Delta or DV01 (i.e., dollar value of one basis point) of all the bonds would be calculated and bucketed into six tenor buckets. For each bucket, the liquidation cost would be approximated by the absolute value of the net DV01 of the bucket multiplied by the Liquidation Grid (in basis points) in the corresponding tenor bucket. The total liquidation cost for the Treasury security sub-portfolio would then be a sum of the costs over all the buckets.

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15 See infra, *Volatility Correlations* section.

16 The minimum cost rate would initially be set as $2 per contract, unless the position is long and the net asset value per contract is less than $2. (For a typical option with a contract size of 100, this would occur if the option was priced below 0.02.) This value would be reviewed annually or at a frequency determined by OCC's MRWG and recalibrated as needed over time.

The Delta LC for the total portfolio would be simple sum of the Delta LCs over all sub-portfolios.

5. Concentration Charges

In addition to Vega and Delta LCs, the proposed model also would incorporate the potential risks involved in closing out large or concentrated positions in a portfolio. The "largeness" of an option position is typically measured in terms of Average Daily Volume ("ADV"). The Vega volume or notional, defined as "Vega-weighted ADV," is also a relevant measure of options trading volume. Closing out large or concentrated positions with one or more Vega notional may either take longer to liquidate or demand wider spreads, and therefore could incur additional cost. To cover this additional risk, the proposed model would use Vega concentration factors ("Vega CF") to scale the Vega LC for option positions. The Vega CFs would be equal to one for small positions that are less than one Vega notional, but may be scaled up for large positions as a function of the size of the positions. Similar to Vega CF, Delta concentration factors ("Delta CF") would be used to scale the Delta LC to account for the concentration risk associated with large Delta positions.

6. Volatility Correlations

Under the proposed model, the Vega LC for each underlying sub-portfolio is calculated using correlations between the Vega buckets. The correlation matrix from the most liquid product (SPX) would be used as the base and would be scaled for other underlyings based on their liquidity class. These would be calibrated from time periods that overlap the stress periods used to calculate Liquidation Grids.

To aggregate the liquidation cost at the portfolio level, the pair-wise correlations of implied volatilities between different underlyings are needed. OCC would use a single correlation value for all cross-underlying correlations rather than a correlation matrix for all cross-underlying correlations to simplify the calibration of the grids. To account for potential errors that may arise from using a single correlation value, OCC would calculate three single correlations representing the minimum, average, and maximum correlation across the liquidity class to determine three different Vega LCs. The highest of these three Vega LCs would be used as the final Vega LC.

7. STANS Margin Floor

The proposed liquidation costs would be added to the base and stress margin components of STANS that are intended to cover the potential losses due to price movements over a two-day risk horizon. In certain cases, well-hedged portfolios may not experience any loss and the resultant STANS margin requirement is close to zero or may even become positive in some extreme cases. If the STANS requirement is positive, this may result in a credit instead of a charge for the Clearing Member. To account for the risk of potentially liquidating a portfolio at current (instead of two-day

ahead) prices, no credit from the margin would be allowed so that the final margin requirement would not be lower than the amount of the liquidation cost.

8. Margin Policy and Stress Testing and Clearing Fund Methodology Description

OCC also would make conforming changes to its Margin Policy and Stress Testing and Clearing Fund Methodology Description to reflect the inclusion of the new liquidation cost charge as an add-on charge to the base STANS margin and how the liquidation cost charge add-on would be incorporated in Clearing Fund shortfall calculations.[17]

Clearing Member Outreach

To inform Clearing Members of the proposed change, OCC has provided overviews of its proposed liquidation cost model to the Financial Risk Advisory Council ("FRAC"), a working group comprised of exchanges, Clearing Members and indirect participants of OCC, and the OCC Roundtable, which was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues,[18] during 2016 and 2017. OCC has also published Information Memos to all Clearing Members discussing the proposed change.

Under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market markers generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

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17 The Stress Testing and Clearing Fund Methodology Description would be revised to note that the shortfall of a portfolio is calculated by offsetting its profit and loss ("PnL") in a stress scenario with its STANS margin assets, which include base margin (i.e., 99% Expected Shortfall), excess net asset value related to long option premium, any non-collateral-in-margins haircut amounts, and various other Add-On Charges such as the proposed liquidation cost charges. Since the cost of liquidation is not considered in stress scenario PnL, a charge for liquidation costs using the same values as calculated for margins is included in shortfall calculations to ensure that the liquidation cost charge is part of the required total credit financial resources.

18 The OCC Roundtable is comprised of representatives of the senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

Given the magnitude of expected changes in margins, OCC expects to conduct an extended parallel implementation for Clearing Members prior to implementation. Additionally, OCC will perform additional outreach to the FRAC upon submission of its regulatory filings to remind Clearing Members of the pending changes and direct outreach with those Clearing Members that would be most impacted by the proposed change and would work closely with such Clearing Members to coordinate the implementation and associated funding for such Clearing Members resulting from the proposed change.[19]

Implementation Timeframe

OCC expects to implement the proposed changes no sooner than thirty (30) days and no later than one hundred eighty (180) days from the date that OCC receives all necessary regulatory approvals for the required filings. OCC will announce the implementation date of the proposed change by an Information Memo posted to its public website at least two (2) weeks prior to implementation.

OCC reviewed the DCO core principles ("Core Principles") as set forth in the Act. During this review, OCC identified the following Core Principles as potentially being impacted:

Risk Management. OCC believes that implementing the proposed rule change will be aligned with the requirements of Core Principle D,[20] which requires, in part, that each DCO limit, through the use of margin and other risk control mechanisms, its potential losses from defaults by members and participants of the DCO to ensure that its operations would not be disrupted and that its non-defaulting members or participants are not exposed to losses they cannot anticipate or control.[21] Core Principle D further requires that each DCO have margin requirements sufficient to cover potential exposures in normal market conditions and that such margin requirements be set using risk-based models and parameters.[22]

As described above, OCC's STANS margin requirements are currently comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC may incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could

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19 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

20 7 U.S.C. 7a-1(c)(2)(D).

21 7 U.S.C. 7a-1(c)(2)(D)(iii).

22 7 U.S.C. 7a-1(c)(2)(D)(iv) - (v). CFTC Regulation 39.13(g)(2)(i) further implements Core Principle D by requiring, in part, that each DCO establish initial margin requirements that are commensurate with the risks of each product and portfolio, including any unusual characteristics of, or risks associated with, particular products or portfolios. See 17 CFR 39.13(g)(2)(i).

entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed liquidation cost model would calculate liquidation costs for OCC's cleared products based on risk measures, gross contract volumes and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC would use the margin it collects from a defaulting Clearing Member, including the proposed liquidation cost charges, to limit the potential losses from such a default and ensure that its operations would not be disrupted and that its non-defaulting members or participants are not exposed to losses they cannot anticipate or control.

Moreover, the proposed liquidation cost model is a risk-based model that would calculate additional margin charges designed to account for potential costs of liquidating Clearing Member portfolios by taking into consideration the risks and attributes associated with relevant products and portfolios cleared by OCC (e.g., volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional). As a result, OCC believes the proposed changes would provide for risk-based models and parameters that are reasonably designed to consider and produce margin levels commensurate with the risks and particular attributes of OCC's cleared products.

For the reasons set forth above, OCC believes the proposed change promotes compliance with Core Principle D under the Act.[23]

Opposing Views

No opposing views were expressed related to the rule amendments.

Notice of Pending Rule Certification

OCC hereby certifies that notice of this rule filing has been be given to Clearing Members of OCC in compliance with Regulation 40.6(a)(2) by posting a copy of the submission on OCC's website concurrently with the filing of this submission.

[23] 7 U.S.C. 7a-1(c)(2)(D).

Certification

OCC hereby certifies that the rule set forth at Item 1 of the enclosed filings complies with the Act and the CFTC's regulations thereunder.

Should you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Justin W. Byrne
Vice President, Regulatory Filings

Enclosure(s)

OMB APPROVAL
OMB Number: 3235-0045 Estimated average burden hours per response.....38

Required fields are shown with yellow backgrounds and asterisks.

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 19b-4

File No.* SR - 2019 - * 004
Amendment No. (req. for Amendments *)

Filing by Options Clearing Corporation

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial * ☑ Amendment * ☐ Withdrawal ☐

Section 19(b)(2) * ☑ Section 19(b)(3)(A) * ☐ Section 19(b)(3)(B) * ☐

Pilot ☐

Extension of Time Period for Commission Action * ☐

Date Expires *

Rule
19b-4(f)(1) 19b-4(f)(4)
19b-4(f)(2) 19b-4(f)(5)
19b-4(f)(3) 19b-4(f)(6)

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010

Section 806(e)(1) * ☐ Section 806(e)(2) * ☐

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934

Section 3C(b)(2) * ☐

Exhibit 2 Sent As Paper Document

Exhibit 3 Sent As Paper Document

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Proposed rule change related to the introduction of a new Liquidation Cost Model in The Options Clearing Corporation's margin methodology.

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * Justin Last Name * Byrne
Title * Vice President, Regulatory Filings
E-mail * jbyrne@theocc.com
Telephone * (202) 971-7238 Fax (312) 322-6280

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

Date 04/18/2019

By Justin W. Byrne
(Name *)

(Title *)
Vice President, Regulatory Filings

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

Justin Byrne, jbyrne@theocc.com

Required fields are shown with yellow backgrounds and asterisks.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

Form 19b-4 Information *

Add Remove View

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

Add Remove View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies *

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO] -xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications

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Exhibit Sent As Paper Document

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Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit 3 - Form, Report, or Questionnaire

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Exhibit Sent As Paper Document

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Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit 4 - Marked Copies

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The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

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The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

Partial Amendment

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If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 19b-4

Proposed Rule Change
by

THE OPTIONS CLEARING CORPORATION

Pursuant to Rule 19b-4 under the
Securities Exchange Act of 1934

Item 1. Text of the Proposed Rule Change

Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 ("Exchange Act" or "Act"),[1] and Rule 19b-4 thereunder,[2] The Options Clearing Corporation ("OCC" or "Corporation") is filing with the Securities and Exchange Commission ("SEC" or "Commission") a proposed rule change in connection with proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description to add a risk-based liquidation charge based on bid-ask spreads to adjust the value of positions to account for the costs of liquidating a defaulting Clearing Member's portfolio.

The proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description are contained in confidential Exhibits 5A - 5C of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included a summary of impact analysis of the proposed model changes in confidential Exhibit 3. The proposed changes are described in detail in Item 3 below. All terms with initial capitalization that are not otherwise defined herein have the same meaning as set forth in the OCC By-Laws and Rules.[3]

Item 2. Procedures of the Self-Regulatory Organization

The proposed rule change was approved for filing with the Commission by the Board of Directors at a meeting held on February 24, 2017, contingent on further approvals by the Risk Committee of the Board of Directors, which were received at a meeting held on May 2, 2017.

Questions should be addressed to Justin W. Byrne, Vice President, Regulatory Filings, at

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1 15 U.S.C. 78s(b)(1).

2 17 CFR 240.19b-4.

3 OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

(202) 971-7238.

Item 3. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

A. Purpose

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"), is OCC's proprietary risk management system that calculates Clearing Member margin requirements.[4] STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[5] The STANS margin requirement is calculated at the portfolio level of Clearing Member legal entity marginable net positions tier account (tiers can be customer, firm, or market marker) and consists of an estimate of a 99% 2-day expected shortfall ("99% Expected Shortfall") and an add-on for model risk (the concentration/dependence stress test charge). The STANS methodology is used to measure the exposure of portfolios of options and futures cleared by OCC and cash instruments in margin collateral.

STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. The base component of the STANS margin requirement for each account is obtained using a risk measure known as 99% Expected Shortfall. Under the 99% Expected Shortfall calculation, an account has a base margin excess (deficit) if its positions in cleared products, plus all existing collateral - whether of types included in the Monte Carlo simulation or of types subjected to traditional "haircuts" — would have a positive (negative) net

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4 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20). A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

5 See OCC Rule 601.

worth after incurring a loss equal to the average of all losses beyond the 99% value at risk (or "VaR") point. This base component is then adjusted by the addition of a stress test component, which is obtained from consideration of the increases in 99% Expected Shortfall that would arise from market movements that are especially large and/or in which various kinds of risk factors exhibit perfect or zero correlations in place of their correlations estimated from historical data, or from extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.[6] STANS margin requirements are intended to cover potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation costs OCC may incur in closing out a defaulted Clearing Member's portfolio.[7] Closing out positions in a defaulted Clearing Member's portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads.

Proposed Changes

OCC is proposing to enhance its margin methodology by introducing a new model to estimate the liquidation cost for all options and futures, as well as the securities in margin collateral. As noted above, closing out positions of a defaulted Clearing Member in the open

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6 STANS margins may also include other add on charges, which are considerably smaller than the base and stress test components, and many of which affect only a minority of accounts.

7 A liquidation cost model was introduced into STANS in 2012 as part of OCC's OTC clearing initiatives. The model is only applied to long-dated options on the Standard & Poor's ("S&P") 500 index ("SPX") that have a tenor of three-years or greater. See Securities Exchange Act Release No. 34-70719 (October 18, 2013), 78 FR 63548 (October 24, 2013) (SR-OCC-2013-16). The existing liquidation model for long-dated SPX options would be replaced by this new model. OCC currently does not have any open interest in OTC options. OCC does currently clear similar exchange traded long-dated FLEX SPX options; however, these options make up less than 0.5% of SPX options open interest.

market could entail selling longs at bid price and covering shorts at ask price. These closing-out costs are currently not taken into account in STANS for all options (with the exception of long-dated SPX index option series, as noted above).[8] Therefore, the purpose of the proposed change is to add additional financial resources in the form of margin, based on liquidation cost grids calibrated using historical stressed periods, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios in the event of a default. The liquidation cost charge would be applied as an add-on to all accounts incurring a STANS margin charge.

The proposed liquidation cost model calculates liquidation cost based on risk measures, gross contract volumes and market bid-ask spreads. In general, the proposed model would be used to calculate two risk-based liquidation costs for a portfolio, Vega[9] liquidation cost ("Vega LC") and Delta liquidation cost ("Delta LC"), using "Liquidation Grids."[10] Options products will incur both Vega and Delta LCs while Delta-one[11] products such as futures contracts, Treasury securities and equity securities, will have only a Delta charge.

The proposed liquidation cost model described herein would include: (1) the decomposition of the defaulter's portfolio into sub-portfolios by underlying security; (2) the creation and calibration of Liquidation Grids used to determine liquidation costs; (3) the

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8 Id.

9 The Delta and Vega of an option represent the sensitivity of the option price with respect to the price and volatility of the underlying security, respectively.

10 "Liquidation Grids" would be comprised collectively of Vega Liquidation Grids, Vega Notional Grids, Delta Liquidation Grids, and Delta Notional Grids. Liquidation Grids are discussed in more detail below in the *Creation and Calibration of Liquidation Grids* section.

11 "Delta one products" refer to products for which a change in the value of the underlying asset results in a change of the same, or nearly the same, proportion in the value of the product.

calculation of the Vega LC (including a minimum Vega LC charge) for options products; (4) the calculation of Delta LCs for both options and Delta-one products; (5) the calculation of Vega and Delta concentration factors; (6) the calculation of volatility correlations for Vega LCs; (7) the establishment of a STANS margin floor based on the liquidation cost; and (8) conforming changes to OCC's Margin Policy and Stress Testing and Clearing Fund Methodology Description.

The new liquidation cost model would cover the following cleared products in a Clearing Member's portfolio: options on indices, equities, Exchange Traded Funds ("ETFs") and futures; FLEX options; future contracts; Treasury securities; and stock loan and collateral securities. The securities not included in STANS margin calculations would not be covered by the new model. The proposed approach to calculating liquidation costs and the conforming changes to OCC's Margin Policy are described in further detail below.

1. Portfolio Decomposition and Creation of Sub-portfolios

For a portfolio consisting of many contracts and underlyings, the proposed model would first divide (or decompose) the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio. The Vega LC and Delta LC are first calculated at a sub-portfolio level and then aggregated to derive the final liquidation cost for the total portfolio. All the option positions with the same fundamental underlying would form one sub-portfolio because they share the same risk characteristics. The equity index, index future and index ETFs would all be categorized by the underlying index that is the basis for the index, future, and ETF-underlying securities. The corresponding options on the index, index future, and ETFs would therefore fall into the same sub-portfolio. In addition, FLEX options on the same underlying would be included in the same sub-portfolio of the regular

options. Similarly, cash products such as equities and futures would be grouped in the same sub-category based on their underlying symbols. All Treasury security positions would form one sub-portfolio. The calculation of Vega LC and Delta LC for each sub-portfolio is summarized in the next sections.

2. Creation and Calibration of Liquidation Grids

A key element of the proposed liquidation cost model is the "Liquidation Grids." The calculations of Vega LC and Delta LC involve a number of liquidity-related quantities such as volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional. The collection of these quantities would be used to create the following Liquidation Grids.

1. Vega Liquidation Grids (or volatility grids): the Vega Liquidation Grids would represent the level of bid-ask spreads on the implied volatility of option contracts for a given underlying. Since the volatility spreads of option contracts vary by the Delta and tenor of the option, OCC would divide the contracts into several Delta buckets by tenor buckets.[12] Each pair (Delta, tenor) is referred to as a Vega bucket. For each bucket, an average volatility spread is estimated and defined as the volatility grid for the bucket. The size of grid would essentially represent the cost for liquidating one unit of Vega risk in the bucket.
2. Vega Notional Grid: the Vega Notional Grid of an underlying security would be the average trading options volume weighted by the Vega of all options on the given

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12 Initially, Vega Liquidation Grids would consist of 5 Delta buckets by 5 tenor buckets, with a total of 25 pairs; however, the Vega Liquidation Grids would be reviewed annually or at a frequency determined by OCC's Model Risk Working Group ("MRWG") and updated as needed as determined by the MRWG. The MRWG is responsible for assisting OCC's Management Committee in overseeing and governing OCC's model-related risk issues and includes representatives from OCC's Financial Risk Management department, Quantitative Risk Management department, Model Validation Group, and Enterprise Risk Management department.

underlying. The size of Vega Notional grids would indicate the average daily trading volume in terms of dollar Vegas (i.e., the Vega multiplied by the volume of the option).

3. Delta Liquidation Grid: the Delta liquidation grid would represent an estimated bid-ask price spread (in percentage) on the underlying.[13] It represents the cost of liquidating one dollar unit of the underlying security. The Delta liquidation grid for Treasury securities represents bid-ask yield spreads, expressed in basis points.
4. Delta Notional Grid: the Delta Notional grid of an underlying security would represent the average trading volume in dollars of the security.[14]

Vega Notional Grids are calibrated at the security level; that is, each individual underlying security would have its own Vega Notional. The Delta Notional Grid and both Vega and Delta Liquidation Grids for all underlying securities are estimated at the levels of a fixed number of classes based on their liquidity level.[15] All equity securities would be divided, based on their membership in commonly used market indices (including, but not limited to, the S&P 100 and 500 index) or other market liquidity measurements, into liquidity classes (which may include, but are not limited to, High Liquid Equities, Medium Liquid Equities and Low Liquid

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13 Delta Liquidation Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the cost of liquidating one dollar unit of the underlying security. The Delta Liquidation Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

14 Delta Notional Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the average trading volume in dollars of the underlying security. The Delta Notional Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

15 Within the same liquidity group, the Vega Notional can vary dramatically from name to name. Moreover, Vega risk can be much greater than Delta risk. As a result, OCC would calculate Vega Notionals at the security level as opposed to the liquidity level.

Equities). Any new equity security would generally default to the lowest liquidity classification unless otherwise assigned to a higher liquidity classification when deemed necessary. Major indices (e.g., SPX or the Cboe Volatility Index ("VIX")) may form their own index liquidity class, which may cover indices, index ETFs, and index futures. In addition, sector ETFs, ETFs on a major commodity (such as Gold, Crude/Natural Gas, Metals, and Electricity), and Treasury ETFs would generally each form individual classes of their own, subject to the availability of liquidation data. Pursuant to the proposed Margins Methodology, these liquidity classes would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed, taking into consideration such factors including, but not limited to, changes in membership of the S&P 100 index and S&P 500 index, listing and delisting of securities, and any corporate actions on the existing securities.

Because the bid-ask spreads can change daily, the use of spreads from current market conditions could cause liquidation costs to fluctuate dramatically with market volatility, especially during a stressed market period. To mitigate this procyclicality issue, Liquidation Grids would be calibrated from several historical stressed periods, which are selected based on the history of VIX index levels and would remain unchanged with time until a new stressed period is selected and added to the calibrations in accordance with the requirements of the proposed Margins Methodology.[16]

3. Vega Liquidation Cost

Vega Liquidation Cost Calculation

Vega LC is the main component of the proposed liquidation cost model. For a simple option contract, the Vega LC would be its position Vega multiplied by its respective bucket in

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16 The Liquidation Grids will be reviewed annually or at a frequency determined by the MRWG.

the Vega Liquidation Grid. The result is approximately equal to one half of the bid-ask price spread. For a portfolio consisting of many contracts and underlyings, the model first divides the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio (as described above). The Vega LCs for sub-portfolios are calculated first and then aggregated to derive the Vega LC for the total portfolio.

The Vega LC for a sub-portfolio, which consists of all the contracts with the same underlying security, would be calculated in several steps. First, the Liquidation Grids would be calibrated for Vega "buckets" that consist of Delta bins by tenor bins as discussed above. These Vega buckets are used to represent the volatility risk at the different areas on the implied volatility surface. Next, the Vega of each contract position in a given sub-portfolio would be calculated and bucketed into one of the Vega buckets. The Vegas falling into the same Vega bucket would then be netted. The Vega LC for each of the Vega buckets is calculated as the net Vega multiplied by the Vega grid of the buckets. Finally, the total liquidation cost for the sub-portfolio would be aggregated from these bucket Vega LCs by using correlations between the Vega buckets. Since the sub-portfolios are formed by the fundamental equity or index underlying the option, the Vega LCs of closely related but different underlying securities are allowed to net. For example, Vega LCs for SPX and related indices, futures, and ETFs that are based on the S&P 500 index would be allowed 100% netting.

The Vega LC for the total portfolio would be a similar correlation-based sum of Vega LCs of all the sub-portfolios, taking into account correlations between the products' implied volatility.[17]

Minimum Liquidation Cost

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17 See infra, *Volatility Correlations* section.

Because the proposed model allows risk netting across closely related option contracts, it is possible that a well-hedged option strategy could result in a very small or zero liquidation cost. To prevent this from happening, a minimum liquidation cost would be introduced to the Vega liquidation charges. The minimum liquidation cost for a sub-portfolio would be calculated as the gross number of option contracts multiplied by a minimum cost per contract value.[18] The minimum cost amount would be calculated for the entire portfolio and would be used to floor the final total Vega LC. The proposal would not apply a minimum cost for Delta LC due to the immaterial impact a minimum Delta LC would have on the overall liquidation cost charge.

4. Delta Liquidation Cost

In addition to Vega risk, the model also considers the Delta risk presented in an entire portfolio. If a portfolio has positions in either options, futures, equities, or Treasury securities, it will contain some Delta risk. Under the proposed model, the liquidation cost due to Delta risk in a sub-portfolio (as defined by the underlying) would be approximated by the net dollar Delta of the sub-portfolio multiplied by its respective bucket in the Delta Liquidation Grid.

The proposed model would allow netting of Delta LC if the option contracts, futures, or equity positions belong to or are related to a top index (such as SPX or VIX). For example, in a portfolio, positions in SPX-related options, options on futures, futures, or collateral have their Delta LC netted.

Under the proposed model, U.S. dollar Treasury bonds would form one sub-portfolio. The Delta or DV01 (i.e., dollar value of one basis point) of all the bonds would be calculated and

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18 The minimum cost rate would initially be set as $2 per contract, unless the position is long and the net asset value per contract is less than $2. (For a typical option with a contract size of 100, this would occur if the option was priced below 0.02.) This value would be reviewed annually or at a frequency determined by OCC's MRWG and recalibrated as needed over time.

bucketed into six tenor buckets. For each bucket, the liquidation cost would be approximated by the absolute value of the net DV01 of the bucket multiplied by the Liquidation Grid (in basis points) in the corresponding tenor bucket. The total liquidation cost for the Treasury security sub-portfolio would then be a sum of the costs over all the buckets.

The Delta LC for the total portfolio would be simple sum of the Delta LCs over all sub-portfolios.

5. Concentration Charges

In addition to Vega and Delta LCs, the proposed model also would incorporate the potential risks involved in closing out large or concentrated positions in a portfolio. The "largeness" of an option position is typically measured in terms of Average Daily Volume ("ADV"). The Vega volume or notional, defined as "Vega-weighted ADV," is also a relevant measure of options trading volume. Closing out large or concentrated positions with one or more Vega notional may either take longer to liquidate or demand wider spreads, and therefore could incur additional cost. To cover this additional risk, the proposed model would use Vega concentration factors ("Vega CF") to scale the Vega LC for option positions. The Vega CFs would be equal to one for small positions that are less than one Vega notional, but may be scaled up for large positions as a function of the size of the positions. Similar to Vega CF, Delta concentration factors ("Delta CF") would be used to scale the Delta LC to account for the concentration risk associated with large Delta positions.

6. Volatility Correlations

Under the proposed model, the Vega LC for each underlying sub-portfolio is calculated using correlations between the Vega buckets. The correlation matrix from the most liquid product (SPX) would be used as the base and would be scaled for other underlyings based on

their liquidity class. These would be calibrated from time periods that overlap the stress periods used to calculate Liquidation Grids.

To aggregate the liquidation cost at the portfolio level, the pair-wise correlations of implied volatilities between different underlyings are needed. OCC would use a single correlation value for all cross-underlying correlations rather than a correlation matrix for all cross-underlying correlations to simplify the calibration of the grids. To account for potential errors that may arise from using a single correlation value, OCC would calculate three single correlations representing the minimum, average, and maximum correlation across the liquidity class to determine three different Vega LCs. The highest of these three Vega LCs would be used as the final Vega LC.

7. STANS Margin Floor

The proposed liquidation costs would be added to the base and stress margin components of STANS that are intended to cover the potential losses due to price movements over a two-day risk horizon. In certain cases, well-hedged portfolios may not experience any loss and the resultant STANS margin requirement is close to zero or may even become positive in some extreme cases. If the STANS requirement is positive, this may result in a credit instead of a charge for the Clearing Member. To account for the risk of potentially liquidating a portfolio at current (instead of two-day ahead) prices, no credit from the margin would be allowed so that the final margin requirement would not be lower than the amount of the liquidation cost.

8. Margin Policy and Stress Testing and Clearing Fund Methodology Description

OCC also would make conforming changes to its Margin Policy and Stress Testing and Clearing Fund Methodology Description to reflect the inclusion of the new liquidation cost charge as an add-on charge to the base STANS margin and how the liquidation cost charge add-

on would be incorporated in Clearing Fund shortfall calculations.[19]

Clearing Member Outreach

To inform Clearing Members of the proposed change, OCC has provided overviews of its proposed liquidation cost model to the Financial Risk Advisory Council ("FRAC"), a working group comprised of exchanges, Clearing Members and indirect participants of OCC, and the OCC Roundtable, which was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues,[20] during 2016 and 2017. OCC has also published Information Memos to all Clearing Members discussing the proposed change.

Under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts

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19 The Stress Testing and Clearing Fund Methodology Description would be revised to note that the shortfall of a portfolio is calculated by offsetting its profit and loss ("PnL") in a stress scenario with its STANS margin assets, which include base margin (i.e., 99% Expected Shortfall), excess net asset value related to long option premium, any non-collateral-in-margins haircut amounts, and various other Add-On Charges such as the proposed liquidation cost charges. Since the cost of liquidation is not considered in stress scenario PnL, a charge for liquidation costs using the same values as calculated for margins is included in shortfall calculations to ensure that the liquidation cost charge is part of the required total credit financial resources.

20 The OCC Roundtable is comprised of representatives of the senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market markers generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

Given the magnitude of expected changes in margins, OCC expects to conduct an extended parallel implementation for Clearing Members prior to implementation. Additionally, OCC will perform additional outreach to the FRAC upon submission of its regulatory filings to remind Clearing Members of the pending changes and direct outreach with those Clearing Members that would be most impacted by the proposed change and would work closely with such Clearing Members to coordinate the implementation and associated funding for such Clearing Members resulting from the proposed change.[21]

Implementation Timeframe

OCC expects to implement the proposed changes no sooner than thirty (30) days and no later than one hundred eighty (180) days from the date that OCC receives all necessary regulatory approvals for the filings. OCC will announce the implementation date of the proposed change by an Information Memo posted to its public website at least two (2) weeks prior to implementation.

B. Statutory Basis

OCC believes the proposed rule change is consistent with Section 17A of the Act[22] and the regulations thereunder. Section 17A(b)(3)(F) of the Act,[23] requires, among other things, that the rules of a clearing agency be designed to promote the prompt and accurate clearance and

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21 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

22 17 U.S.C. 78q-1.

23 17 U.S.C. 78q-1(b)(3)(F).

settlement of securities transactions and, to the extent applicable, derivative agreements, contracts, and transactions, to assure the safeguarding of securities and funds which are in the custody or control of the clearing or agency or for which it is responsible, and, in general, to protect investors and the public interest. As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC may incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed liquidation cost model would calculate liquidation costs for OCC's cleared products based on risk measures, gross contract volumes and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses they cannot anticipate or control as a result of such a default. As a result, OCC believes the proposed changes would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC. OCC believes that the proposed rule change is therefore designed, in general, to promote the prompt and accurate clearance and settlement of securities and derivatives transactions, assure the safeguarding of securities and funds which are in the custody or control of OCC or for which it is responsible, and protect investors and the

public interest in accordance with Section 17A(b)(3)(F) of the Act.[24]

Rule 17Ad-22(b)(2)[25] requires, in part, that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements. As described above, the proposed liquidation cost model is a risk-based model that calculates liquidation cost based on risk measures, gross contract volumes, and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios, which currently are not taken into account in STANS for all of OCC's cleared products. Accordingly, the proposed risk-based model would be used to calculate margin requirements designed to limit OCC's credit exposures to participants under normal market conditions in a manner consistent with Rule 17Ad-22(b)(2).[26]

Rule 17Ad-22(e)(6)(i)[27] further requires a covered clearing agency that provides central counterparty services to establish, implement, maintain and enforce written policies and procedures reasonably designed to cover its credit exposures to its participants by establishing a risk-based margin system that considers, and produces margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market. The proposed liquidation cost model is a risk-based model that would calculate additional margin charges

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24 Id.

25 17 CFR 240.17Ad-22(b)(2).

26 Id.

27 17 CFR 240.17Ad-22(e)(6)(i).

designed to account for potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios by taking into consideration the risks and attributes associated with relevant products and portfolios cleared by OCC (e.g., volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional). Accordingly, OCC believes the proposed changes are consistent with Rule 17Ad-22(e)(6)(i).[28]

Item 4. Self-Regulatory Organization's Statement on Burden on Competition

Section 17A(b)(3)(I) of the Act[29] requires that the rules of a clearing agency not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. OCC believes that while the proposed rule change may have differing impacts on its Clearing Members, it would not impose a burden on competition. Moreover, OCC believes that any competitive impact imposed by the proposed liquidation cost model would be necessary and appropriate in furtherance of the purposes of Act.[30] As noted above, under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market markers generating

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28 Id.

29 15 U.S.C. 78q-1(b)(3)(I).

30 Id.

approximately 25% and 15% of the proposed liquidation cost charges, respectively.

The proposed changes are primarily designed to allow OCC to determine margin requirements that more accurately represent the risk presented by the extra cost in liquidating a portfolio due to the bid-ask spread. While the individual impact of the proposed changes will vary and depend on the composition of the portfolio in question, the proposed risk model enhancements are intended apply to all Clearing Members to address potential liquidation costs that OCC may incur in closing out a defaulted Clearing Member's portfolio. OCC does not believe that the proposed rule change would unfairly inhibit access to OCC's services or disadvantage or favor any particular user in relationship to another user. Accordingly, OCC believes that any competitive impact would be necessary and appropriate in furtherance of the prompt and accurate clearance and settlement of securities transactions, the safeguarding of securities and funds which are in the custody or control of OCC or for which it is responsible, and in general, the protection of investors and the public interest.

Item 5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

Written comments were not and are not intended to be solicited with respect to the proposed rule change, and none have been received. OCC will notify the Commission of any written comments received by OCC.

Item 6. Extension of Time Period for Commission Action

Not applicable.

Item 7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2) or Section 19(b)(7)(D)

Not applicable.

Item 8. Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

Not applicable.

Item 9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

Item 10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

Item 11. Exhibits

Exhibit 1A. Completed Notice of Proposed Rule Change for publication in the Federal Register.

Exhibit 3. Confidential Impact Analysis.

Exhibit 5A. Margins Methodology.

Exhibit 5B. Margin Policy.

Exhibit 5C. Stress Testing and Clearing Fund Methodology Description.

Exhibits 3 and 5A-5C have been omitted and filed separately with the Commission. Confidential treatment of Exhibits 3 and 5A-5C is requested pursuant to SEC Rule 24b-2 (17 CFR 240.24b-2).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, The Options Clearing Corporation has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

THE OPTIONS CLEARING CORPORATION

By: _____

Justin W. Byrne
Vice President, Regulatory Filings

EXHIBIT 1A

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-[_____]; File No. SR-OCC-2019-004)

April __, 2019

Self-Regulatory Organizations; The Options Clearing Corporation; Notice of Filing of Proposed Rule Change Related to the Introduction of a New Liquidation Cost Model in The Options Clearing Corporation's Margin Methodology

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Exchange Act" or "Act"),[1] and Rule 19b-4 thereunder,[2] notice is hereby given that on April 18, 2019, The Options Clearing Corporation ("OCC") filed with the Securities and Exchange Commission ("SEC" or "Commission") the proposed rule change as described in Items I, II, and III below, which Items have been prepared primarily by OCC. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Clearing Agency's Statement of the Terms of Substance of the Proposed Rule Change

The proposed rule change is filed in connection with proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description to add a risk-based liquidation charge based on bid-ask spreads to adjust the value of positions to account for the costs of liquidating a defaulting Clearing Member's portfolio.

The proposed changes to OCC's Margins Methodology, Margin Policy, and Stress Testing and Clearing Fund Methodology Description are contained in confidential

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1 15 U.S.C. 78s(b)(1).

2 17 CFR 240.19b-4.

Exhibits 5A - 5C of the filing. Material proposed to be added is marked by underlining and material proposed to be deleted is marked by strikethrough text. OCC also has included a summary of impact analysis of the proposed model changes in confidential Exhibit 3. The proposed changes are described in detail in Item II below.

The proposed rule change is available on OCC's website at https://www.theocc.com/about/publications/bylaws.jsp. All terms with initial capitalization that are not otherwise defined herein have the same meaning as set forth in the OCC By-Laws and Rules.[3]

II. Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, OCC included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. OCC has prepared summaries, set forth in sections (A), (B), and (C) below, of the most significant aspects of these statements.

(A) Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

(1) Purpose

Background

OCC's margin methodology, the System for Theoretical Analysis and Numerical Simulations ("STANS"), is OCC's proprietary risk management system that calculates

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[3] OCC's By-Laws and Rules can be found on OCC's public website: http://optionsclearing.com/about/publications/bylaws.jsp.

Clearing Member margin requirements.[4] STANS utilizes large-scale Monte Carlo simulations to forecast price and volatility movements in determining a Clearing Member's margin requirement.[5] The STANS margin requirement is calculated at the portfolio level of Clearing Member legal entity marginable net positions tier account (tiers can be customer, firm, or market marker) and consists of an estimate of a 99% 2-day expected shortfall ("99% Expected Shortfall") and an add-on for model risk (the concentration/dependence stress test charge). The STANS methodology is used to measure the exposure of portfolios of options and futures cleared by OCC and cash instruments in margin collateral.

STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. The base component of the STANS margin requirement for each account is obtained using a risk measure known as 99% Expected Shortfall. Under the 99% Expected Shortfall calculation, an account has a base margin excess (deficit) if its positions in cleared products, plus all existing collateral - whether of types included in the Monte Carlo simulation or of types subjected to traditional "haircuts" — would have a positive (negative) net worth after incurring a loss equal to the average of all losses beyond the 99% value at risk (or "VaR") point. This base component is then adjusted by the addition of a stress test component, which is obtained from consideration of the increases in 99% Expected Shortfall that would arise from market movements that are especially large and/or in which various kinds of risk factors

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4 See Securities Exchange Act Release No. 53322 (February 15, 2006), 71 FR 9403 (February 23, 2006) (SR-OCC-2004-20). A detailed description of the STANS methodology is available at http://optionsclearing.com/risk-management/margins/.

5 See OCC Rule 601.

exhibit perfect or zero correlations in place of their correlations estimated from historical data, or from extreme adverse idiosyncratic movements in individual risk factors to which the account is particularly exposed.[6] STANS margin requirements are intended to cover potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation costs OCC may incur in closing out a defaulted Clearing Member's portfolio.[7] Closing out positions in a defaulted Clearing Member's portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads.

Proposed Changes

OCC is proposing to enhance its margin methodology by introducing a new model to estimate the liquidation cost for all options and futures, as well as the securities in margin collateral. As noted above, closing out positions of a defaulted Clearing Member in the open market could entail selling longs at bid price and covering shorts at ask price. These closing-out costs are currently not taken into account in STANS for all

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6 STANS margins may also include other add on charges, which are considerably smaller than the base and stress test components, and many of which affect only a minority of accounts.

7 A liquidation cost model was introduced into STANS in 2012 as part of OCC's OTC clearing initiatives. The model is only applied to long-dated options on the Standard & Poor's ("S&P") 500 index ("SPX") that have a tenor of three-years or greater. See Securities Exchange Act Release No. 34-70719 (October 18, 2013), 78 FR 63548 (October 24, 2013) (SR-OCC-2013-16). The existing liquidation model for long-dated SPX options would be replaced by this new model. OCC currently does not have any open interest in OTC options. OCC does currently clear similar exchange traded long-dated FLEX SPX options; however, these options make up less than 0.5% of SPX options open interest.

options (with the exception of long-dated SPX index option series, as noted above).[8] Therefore, the purpose of the proposed change is to add additional financial resources in the form of margin, based on liquidation cost grids calibrated using historical stressed periods, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios in the event of a default. The liquidation cost charge would be applied as an add-on to all accounts incurring a STANS margin charge.

The proposed liquidation cost model calculates liquidation cost based on risk measures, gross contract volumes and market bid-ask spreads. In general, the proposed model would be used to calculate two risk-based liquidation costs for a portfolio, Vega[9] liquidation cost ("Vega LC") and Delta liquidation cost ("Delta LC"), using "Liquidation Grids."[10] Options products will incur both Vega and Delta LCs while Delta-one[11] products such as futures contracts, Treasury securities and equity securities, will have only a Delta charge.

The proposed liquidation cost model described herein would include: (1) the decomposition of the defaulter's portfolio into sub-portfolios by underlying security; (2) the creation and calibration of Liquidation Grids used to determine liquidation costs; (3)

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8 Id.

9 The Delta and Vega of an option represent the sensitivity of the option price with respect to the price and volatility of the underlying security, respectively.

10 "Liquidation Grids" would be comprised collectively of Vega Liquidation Grids, Vega Notional Grids, Delta Liquidation Grids, and Delta Notional Grids. Liquidation Grids are discussed in more detail below in the *Creation and Calibration of Liquidation Grids* section.

11 "Delta one products" refer to products for which a change in the value of the underlying asset results in a change of the same, or nearly the same, proportion in the value of the product.

the calculation of the Vega LC (including a minimum Vega LC charge) for options products; (4) the calculation of Delta LCs for both options and Delta-one products; (5) the calculation of Vega and Delta concentration factors; (6) the calculation of volatility correlations for Vega LCs; (7) the establishment of a STANS margin floor based on the liquidation cost; and (8) conforming changes to OCC's Margin Policy and Stress Testing and Clearing Fund Methodology Description.

The new liquidation cost model would cover the following cleared products in a Clearing Member's portfolio: options on indices, equities, Exchange Traded Funds ("ETFs") and futures; FLEX options; future contracts; Treasury securities; and stock loan and collateral securities. The securities not included in STANS margin calculations would not be covered by the new model.

The proposed approach to calculating liquidation costs and the conforming changes to OCC's Margin Policy are described in further detail below.

1. Portfolio Decomposition and Creation of Sub-portfolios

For a portfolio consisting of many contracts and underlyings, the proposed model would first divide (or decompose) the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio. The Vega LC and Delta LC are first calculated at a sub-portfolio level and then aggregated to derive the final liquidation cost for the total portfolio. All the option positions with the same fundamental underlying would form one sub-portfolio because they share the same risk characteristics. The equity index, index future and index ETFs would all be categorized by the underlying index that is the basis for the index, future, and ETF-underlying securities. The corresponding options on the index, index future,

and ETFs would therefore fall into the same sub-portfolio. In addition, FLEX options on the same underlying would be included in the same sub-portfolio of the regular options. Similarly, cash products such as equities and futures would be grouped in the same sub-category based on their underlying symbols. All Treasury security positions would form one sub-portfolio. The calculation of Vega LC and Delta LC for each sub-portfolio is summarized in the next sections.

2. Creation and Calibration of Liquidation Grids

A key element of the proposed liquidation cost model is the "Liquidation Grids." The calculations of Vega LC and Delta LC involve a number of liquidity-related quantities such as volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional. The collection of these quantities would be used to create the following Liquidation Grids.

1. Vega Liquidation Grids (or volatility grids): the Vega Liquidation Grids would represent the level of bid-ask spreads on the implied volatility of option contracts for a given underlying. Since the volatility spreads of option contracts vary by the Delta and tenor of the option, OCC would divide the contracts into several Delta buckets by tenor buckets.[12] Each pair (Delta, tenor) is referred to as a Vega bucket. For each bucket, an average volatility spread is estimated and defined as

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[12] Initially, Vega Liquidation Grids would consist of 5 Delta buckets by 5 tenor buckets, with a total of 25 pairs; however, the Vega Liquidation Grids would be reviewed annually or at a frequency determined by OCC's Model Risk Working Group ("MRWG") and updated as needed as determined by the MRWG. The MRWG is responsible for assisting OCC's Management Committee in overseeing and governing OCC's model-related risk issues and includes representatives from OCC's Financial Risk Management department, Quantitative Risk Management department, Model Validation Group, and Enterprise Risk Management department.

the volatility grid for the bucket. The size of grid would essentially represent the cost for liquidating one unit of Vega risk in the bucket.

2. Vega Notional Grid: the Vega Notional Grid of an underlying security would be the average trading options volume weighted by the Vega of all options on the given underlying. The size of Vega Notional grids would indicate the average daily trading volume in terms of dollar Vegas (i.e., the Vega multiplied by the volume of the option).
3. Delta Liquidation Grid: the Delta liquidation grid would represent an estimated bid-ask price spread (in percentage) on the underlying.[13] It represents the cost of liquidating one dollar unit of the underlying security. The Delta liquidation grid for Treasury securities represents bid-ask yield spreads, expressed in basis points.
4. Delta Notional Grid: the Delta Notional grid of an underlying security would represent the average trading volume in dollars of the security.[14]

Vega Notional Grids are calibrated at the security level; that is, each individual underlying security would have its own Vega Notional. The Delta Notional Grid and both Vega and Delta Liquidation Grids for all underlying securities are estimated at the

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13 Delta Liquidation Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the cost of liquidating one dollar unit of the underlying security. The Delta Liquidation Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

14 Delta Notional Grids are comprised of several rows representing liquidity categories for the underlying security (initially 14 rows, subject to periodic review and modification) and one column representing the average trading volume in dollars of the underlying security. The Delta Notional Grids would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed as determined by the MRWG.

levels of a fixed number of classes based on their liquidity level.[15] All equity securities would be divided, based on their membership in commonly used market indices (including, but not limited to, the S&P 100 and 500 index) or other market liquidity measurements, into liquidity classes (which may include, but are not limited to, High Liquid Equities, Medium Liquid Equities and Low Liquid Equities). Any new equity security would generally default to the lowest liquidity classification unless otherwise assigned to a higher liquidity classification when deemed necessary. Major indices (e.g., SPX or the Cboe Volatility Index ("VIX")) may form their own index liquidity class, which may cover indices, index ETFs, and index futures. In addition, sector ETFs, ETFs on a major commodity (such as Gold, Crude/Natural Gas, Metals, and Electricity), and Treasury ETFs would generally each form individual classes of their own, subject to the availability of liquidation data. Pursuant to the proposed Margins Methodology, these liquidity classes would be reviewed annually or at a frequency determined by OCC's MRWG and updated as needed, taking into consideration such factors including, but not limited to, changes in membership of the S&P 100 index and S&P 500 index, listing and delisting of securities, and any corporate actions on the existing securities.

Because the bid-ask spreads can change daily, the use of spreads from current market conditions could cause liquidation costs to fluctuate dramatically with market volatility, especially during a stressed market period. To mitigate this procyclicality issue, Liquidation Grids would be calibrated from several historical stressed periods, which are selected based on the history of VIX index levels and would remain unchanged

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15 Within the same liquidity group, the Vega Notional can vary dramatically from name to name. Moreover, Vega risk can be much greater than Delta risk. As a result, OCC would calculate Vega Notionals at the security level as opposed to the liquidity level.

with time until a new stressed period is selected and added to the calibrations in accordance with the requirements of the proposed Margins Methodology.[16]

3. Vega Liquidation Cost

Vega Liquidation Cost Calculation

Vega LC is the main component of the proposed liquidation cost model. For a simple option contract, the Vega LC would be its position Vega multiplied by its respective bucket in the Vega Liquidation Grid. The result is approximately equal to one half of the bid-ask price spread. For a portfolio consisting of many contracts and underlyings, the model first divides the portfolio into sub-portfolios by underlying security such that all contracts with the same underlying are grouped into the same sub-portfolio (as described above). The Vega LCs for sub-portfolios are calculated first and then aggregated to derive the Vega LC for the total portfolio.

The Vega LC for a sub-portfolio, which consists of all the contracts with the same underlying security, would be calculated in several steps. First, the Liquidation Grids would be calibrated for Vega "buckets" that consist of Delta bins by tenor bins as discussed above. These Vega buckets are used to represent the volatility risk at the different areas on the implied volatility surface. Next, the Vega of each contract position in a given sub-portfolio would be calculated and bucketed into one of the Vega buckets. The Vegas falling into the same Vega bucket would then be netted. The Vega LC for each of the Vega buckets is calculated as the net Vega multiplied by the Vega grid of the buckets. Finally, the total liquidation cost for the sub-portfolio would be aggregated from these bucket Vega LCs by using correlations between the Vega buckets. Since the sub-

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16 The Liquidation Grids will be reviewed annually or at a frequency determined by the MRWG.

portfolios are formed by the fundamental equity or index underlying the option, the Vega LCs of closely related but different underlying securities are allowed to net. For example, Vega LCs for SPX and related indices, futures, and ETFs that are based on the S&P 500 index would be allowed 100% netting.

The Vega LC for the total portfolio would be a similar correlation-based sum of Vega LCs of all the sub-portfolios, taking into account correlations between the products' implied volatility.[17]

Minimum Liquidation Cost

Because the proposed model allows risk netting across closely related option contracts, it is possible that a well-hedged option strategy could result in a very small or zero liquidation cost. To prevent this from happening, a minimum liquidation cost would be introduced to the Vega liquidation charges. The minimum liquidation cost for a sub-portfolio would be calculated as the gross number of option contracts multiplied by a minimum cost per contract value.[18] The minimum cost amount would be calculated for the entire portfolio and would be used to floor the final total Vega LC. The proposal would not apply a minimum cost for Delta LC due to the immaterial impact a minimum Delta LC would have on the overall liquidation cost charge.

4. Delta Liquidation Cost

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17 See infra, *Volatility Correlations* section.

18 The minimum cost rate would initially be set as $2 per contract, unless the position is long and the net asset value per contract is less than $2. (For a typical option with a contract size of 100, this would occur if the option was priced below 0.02.) This value would be reviewed annually or at a frequency determined by OCC's MRWG and recalibrated as needed over time.

In addition to Vega risk, the model also considers the Delta risk presented in an entire portfolio. If a portfolio has positions in either options, futures, equities, or Treasury securities, it will contain some Delta risk. Under the proposed model, the liquidation cost due to Delta risk in a sub-portfolio (as defined by the underlying) would be approximated by the net dollar Delta of the sub-portfolio multiplied by its respective bucket in the Delta Liquidation Grid.

The proposed model would allow netting of Delta LC if the option contracts, futures, or equity positions belong to or are related to a top index (such as SPX or VIX). For example, in a portfolio, positions in SPX-related options, options on futures, futures, or collateral have their Delta LC netted.

Under the proposed model, U.S. dollar Treasury bonds would form one sub-portfolio. The Delta or DV01 (i.e., dollar value of one basis point) of all the bonds would be calculated and bucketed into six tenor buckets. For each bucket, the liquidation cost would be approximated by the absolute value of the net DV01 of the bucket multiplied by the Liquidation Grid (in basis points) in the corresponding tenor bucket. The total liquidation cost for the Treasury security sub-portfolio would then be a sum of the costs over all the buckets.

The Delta LC for the total portfolio would be simple sum of the Delta LCs over all sub-portfolios.

5. Concentration Charges

In addition to Vega and Delta LCs, the proposed model also would incorporate the potential risks involved in closing out large or concentrated positions in a portfolio. The “largeness” of an option position is typically measured in terms of Average Daily

Volume ("ADV"). The Vega volume or notional, defined as "Vega-weighted ADV," is also a relevant measure of options trading volume. Closing out large or concentrated positions with one or more Vega notional may either take longer to liquidate or demand wider spreads, and therefore could incur additional cost. To cover this additional risk, the proposed model would use Vega concentration factors ("Vega CF") to scale the Vega LC for option positions. The Vega CFs would be equal to one for small positions that are less than one Vega notional, but may be scaled up for large positions as a function of the size of the positions. Similar to Vega CF, Delta concentration factors ("Delta CF") would be used to scale the Delta LC to account for the concentration risk associated with large Delta positions.

6. Volatility Correlations

Under the proposed model, the Vega LC for each underlying sub-portfolio is calculated using correlations between the Vega buckets. The correlation matrix from the most liquid product (SPX) would be used as the base and would be scaled for other underlyings based on their liquidity class. These would be calibrated from time periods that overlap the stress periods used to calculate Liquidation Grids.

To aggregate the liquidation cost at the portfolio level, the pair-wise correlations of implied volatilities between different underlyings are needed. OCC would use a single correlation value for all cross-underlying correlations rather than a correlation matrix for all cross-underlying correlations to simplify the calibration of the grids. To account for potential errors that may arise from using a single correlation value, OCC would calculate three single correlations representing the minimum, average, and maximum correlation

across the liquidity class to determine three different Vega LCs. The highest of these three Vega LCs would be used as the final Vega LC.

7. STANS Margin Floor

The proposed liquidation costs would be added to the base and stress margin components of STANS that are intended to cover the potential losses due to price movements over a two-day risk horizon. In certain cases, well-hedged portfolios may not experience any loss and the resultant STANS margin requirement is close to zero or may even become positive in some extreme cases. If the STANS requirement is positive, this may result in a credit instead of a charge for the Clearing Member. To account for the risk of potentially liquidating a portfolio at current (instead of two-day ahead) prices, no credit from the margin would be allowed so that the final margin requirement would not be lower than the amount of the liquidation cost.

8. Margin Policy and Stress Testing and Clearing Fund Methodology Description

OCC also would make conforming changes to its Margin Policy and Stress Testing and Clearing Fund Methodology Description to reflect the inclusion of the new liquidation cost charge as an add-on charge to the base STANS margin and how the liquidation cost charge add-on would be incorporated in Clearing Fund shortfall calculations.[19]

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19 The Stress Testing and Clearing Fund Methodology Description would be revised to note that the shortfall of a portfolio is calculated by offsetting its profit and loss ("PnL") in a stress scenario with its STANS margin assets, which include base margin (i.e., 99% Expected Shortfall), excess net asset value related to long option premium, any non-collateral-in-margins haircut amounts, and various other Add-On Charges such as the proposed liquidation cost charges. Since the cost of liquidation is not considered in stress scenario PnL, a charge for liquidation costs using the same values as calculated for margins is included in shortfall

Clearing Member Outreach

To inform Clearing Members of the proposed change, OCC has provided overviews of its proposed liquidation cost model to the Financial Risk Advisory Council ("FRAC"), a working group comprised of exchanges, Clearing Members and indirect participants of OCC, and the OCC Roundtable, which was established to bring Clearing Members, exchanges and OCC together to discuss industry and operational issues,[20] during 2016 and 2017. OCC has also published Information Memos to all Clearing Members discussing the proposed change.

Under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market markers

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calculations to ensure that the liquidation cost charge is part of the required total credit financial resources.

20 The OCC Roundtable is comprised of representatives of the senior OCC staff, participant exchanges and Clearing Members, representing the diversity of OCC's membership in industry segments, OCC-cleared volume, business type, operational structure and geography.

generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

Given the magnitude of expected changes in margins, OCC expects to conduct an extended parallel implementation for Clearing Members prior to implementation. Additionally, OCC will perform additional outreach to the FRAC upon submission of its regulatory filings to remind Clearing Members of the pending changes and direct outreach with those Clearing Members that would be most impacted by the proposed change and would work closely with such Clearing Members to coordinate the implementation and associated funding for such Clearing Members resulting from the proposed change.[21]

Implementation Timeframe

OCC expects to implement the proposed changes no sooner than thirty (30) days and no later than one hundred eighty (180) days from the date that OCC receives all necessary regulatory approvals for the filings. OCC will announce the implementation date of the proposed change by an Information Memo posted to its public website at least two (2) weeks prior to implementation.

(2) Statutory Basis

OCC believes the proposed rule change is consistent with Section 17A of the Act[22] and the regulations thereunder. Section 17A(b)(3)(F) of the Act,[23] requires, among other things, that the rules of a clearing agency be designed to promote the prompt and

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21 Specifically, OCC will discuss with those Clearing Members how they plan to satisfy any increase in their margin requirements associated with the proposed change.

22 17 U.S.C. 78q-1.

23 17 U.S.C. 78q-1(b)(3)(F).

accurate clearance and settlement of securities transactions and, to the extent applicable, derivative agreements, contracts, and transactions, to assure the safeguarding of securities and funds which are in the custody or control of the clearing or agency or for which it is responsible, and, in general, to protect investors and the public interest. As described above, STANS margin requirements are comprised of the sum of several components, each reflecting a different aspect of risk. These margins are intended to cover the potential losses due to price movements over a two-day risk horizon; however, the base and stress margin components do not cover the potential liquidation cost OCC may incur in closing out a defaulted Clearing Member's portfolio. Closing out positions in a defaulted portfolio could entail selling longs at bid price and covering shorts at ask price. This means that additional liquidation costs may need to take into account the bid-ask price spreads. The proposed liquidation cost model would calculate liquidation costs for OCC's cleared products based on risk measures, gross contract volumes and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios. OCC uses the margin it collects from a defaulting Clearing Member to protect other Clearing Members from losses they cannot anticipate or control as a result of such a default. As a result, OCC believes the proposed changes would reduce the overall level of risk to OCC, its Clearing Members, and the markets served by OCC. OCC believes that the proposed rule change is therefore designed, in general, to promote the prompt and accurate clearance and settlement of securities and derivatives transactions, assure the safeguarding of securities and funds which are in the custody or

control of OCC or for which it is responsible, and protect investors and the public interest in accordance with Section 17A(b)(3)(F) of the Act.[24]

Rule 17Ad-22(b)(2)[25] requires, in part, that a registered clearing agency that performs central counterparty services establish, implement, maintain and enforce written policies and procedures reasonably designed to use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements. As described above, the proposed liquidation cost model is a risk-based model that calculates liquidation cost based on risk measures, gross contract volumes, and market bid-ask spreads. The proposed model is designed to provide additional financial resources in the form of margin, based on liquidation costs and current market prices, to guard against potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios, which currently are not taken into account in STANS for all of OCC's cleared products. Accordingly, the proposed risk-based model would be used to calculate margin requirements designed to limit OCC's credit exposures to participants under normal market conditions in a manner consistent with Rule 17Ad-22(b)(2).[26]

Rule 17Ad-22(e)(6)(i)[27] further requires a covered clearing agency that provides central counterparty services to establish, implement, maintain and enforce written policies and procedures reasonably designed to cover its credit exposures to its participants by establishing a risk-based margin system that considers, and produces

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24 Id.

25 17 CFR 240.17Ad-22(b)(2).

26 Id.

27 17 CFR 240.17Ad-22(e)(6)(i).

margin levels commensurate with, the risks and particular attributes of each relevant product, portfolio, and market. The proposed liquidation cost model is a risk-based model that would calculate additional margin charges designed to account for potential shortfalls in margin requirements that may arise due to the costs of liquidating Clearing Member portfolios by taking into consideration the risks and attributes associated with relevant products and portfolios cleared by OCC (e.g., volatility bid-ask spreads, price bid-ask spreads, Vega notional, and Delta notional). Accordingly, OCC believes the proposed changes are consistent with Rule 17Ad-22(e)(6)(i).[28]

The proposed rule changes are not inconsistent with the existing rules of OCC, including any other rules proposed to be amended.

(B) Clearing Agency's Statement on Burden on Competition

Section 17A(b)(3)(I) of the Act[29] requires that the rules of a clearing agency not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. OCC believes that while the proposed rule change may have differing impacts on its Clearing Members, it would not impose a burden on competition. Moreover, OCC believes that any competitive impact imposed by the proposed liquidation cost model would be necessary and appropriate in furtherance of the purposes of Act.[30] As noted above, under the proposed liquidation cost model, each Clearing Member/account would independently observe different levels of impact based on the composition of their cleared portfolios. Based on OCC's analysis to-date, directional portfolios containing more outright positions, which are more typically associated with

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28 Id.

29 15 U.S.C. 78q-1(b)(3)(I).

30 Id.

customer accounts, are most likely to see the largest impact from the proposed liquidation cost charges, while more well-hedged portfolios, such as market maker accounts, would be less impacted (and are more likely to incur the minimum liquidation cost charge). In the aggregate, OCC expects the proposed liquidation cost charges to make up approximately 5-8% of total risk margin charges, with customer accounts accounting for roughly 60% of the proposed liquidation cost charges, and proprietary accounts and market markers generating approximately 25% and 15% of the proposed liquidation cost charges, respectively.

The proposed changes are primarily designed to allow OCC to determine margin requirements that more accurately represent the risk presented by the extra cost in liquidating a portfolio due to the bid-ask spread. While the individual impact of the proposed changes will vary and depend on the composition of the portfolio in question, the proposed risk model enhancements are intended apply to all Clearing Members to address potential liquidation costs that OCC may incur in closing out a defaulted Clearing Member's portfolio. OCC does not believe that the proposed rule change would unfairly inhibit access to OCC's services or disadvantage or favor any particular user in relationship to another user. Accordingly, OCC believes that any competitive impact would be necessary and appropriate in furtherance of the prompt and accurate clearance and settlement of securities transactions, the safeguarding of securities and funds which are in the custody or control of OCC or for which it is responsible, and in general, the protection of investors and the public interest.

(C) Clearing Agency's Statement on Comments on the Proposed Rule Change Received from Members, Participants or Others

Written comments on the proposed rule change were not and are not intended to be

solicited with respect to the proposed rule change and none have been received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self- regulatory organization consents, the Commission will:

(A) by order approve or disapprove the proposed rule change, or

(B) institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments:

- Use the Commission's Internet comment form (http://www.sec.gov/rules/sro.shtml); or
- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-OCC-2019-004 on the subject line.

Paper Comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-OCC-2019-004. This file number should be included on the subject line if e-mail is used. To help the Commission process

and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (http://www.sec.gov/rules/sro.shtml). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for inspection and copying at the principal office of OCC and on OCC's website at https://www.theocc.com/about/publications/bylaws.jsp.

All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly.

All submissions should refer to File Number SR-OCC-2019-004 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[31]

Secretary

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31 17 CFR 200.30-3(a)(12).