NOTICE TO MEMBERS
No. 2014 – 218
November 25, 2014

REQUEST FOR COMMENTS

AMENDMENT TO THE OPERATIONS MANUAL AND THE RISK MANUAL OF THE CANADIAN DERIVATIVES CLEARING CORPORATION TO ADDRESS ITS INTRA-DAY VARIATION MARGIN EXPOSURE

Summary

On October 22, 2014, the Board of Directors of Canadian Derivatives Clearing Corporation (CDCC) approved amendments to the Operations Manual and Risk Manual of CDCC. The purpose of the proposed amendment is to implement a new framework to ensure compliance with PFMI requirements (principle 6) in order to manage its intra-day variation margin exposure.

Please find enclosed an analysis document as well as the proposed amendments.

Process for Changes to the Rules

CDCC is recognized as a clearing house under section 12 of the *Derivatives Act* (Québec) by the Autorité des marchés financiers (AMF) and is a recognized clearing agency under section 21.2 of the *Securities Act* (Ontario) by the Ontario Securities Commission (OSC).

The Board of Directors of CDCC has the power to approve the adoption or amendment of Rules and Operations Manual of CDCC. Amendments are submitted to the AMF in accordance with the self-certification process and the Ontario Securities Commission in accordance with the process provided in its Recognition Order.

Comments on the proposed amendments must be submitted within 30 days following the date of publication of the present notice. Please submit your comments to:

Mrs. Pauline Ascoli
Assistant Secretary
Canadian Derivatives Clearing Corporation
Tour de la Bourse
P.O. Box 61, 800 Victoria Square
Montréal, Québec H4Z 1A9
E-mail: legal@m-x.ca

A copy of these comments shall also be forwarded to the AMF and to the OSC to:

Mrs. Anne-Marie Beaudoin
Corporate Secretary
Autorité des marchés financiers
Tour de la Bourse, P.O. Box 246
800 Victoria Square, 22nd Floor
Montréal, Québec H4Z 1G3
E-mail:consultation-en-cours@lautorite.qc.ca

Manager, Market Regulation
Market Regulation Branch
Ontario Securities Commission
Suite 2200,
20 Queen Street West
Toronto, Ontario, M5H 3S8
Fax: 416-595-8940
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For any question or clarification, Clearing Members may contact CDCC's Corporate Operations.

Glenn Goucher
President and Chief Clearing Officer

AMENDMENTS TO THE OPERATIONS MANUAL AND RISK MANUAL OF THE CANADIAN DERIVATIVES CLEARING CORPORATION TO ADDRESS ITS INTRA-DAY VARIATION MARGIN EXPOSURE

CONTENTS

I. SUMMARY

CDCC considers the Intra-Day Variation Margin Risk as the intra-day risk arising in circumstances in which market volatility or surges in trading volumes produce unusually large Variation Margin (VM) exposures. Hence, to address this risk, CDCC proposes to develop analytic tools in order to have the operational capacity to make punctual intra-day margin calls (with real time positions and intraday market prices). Margin calls would be performed only with Clearing Members to which CDCC has significant cash payment exposures on their positions (i.e. for Futures positions only) and will be collaterized in the Difference Fund.

II. ANALYSIS

a. Background

CDCC proposes to implement a new framework to ensure compliance with PFMI requirements (principle 6) in order to manage its intra-day variation margin exposure. In fact, the Committee on Payment and Settlement Systems had clearly stated in April 2012[1] that a central counterparty ("CCP") should:

(a) Mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures; and
(b) Have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.

b. Description and Analysis of Impacts

In order to address the Intra-Day Variation Margin Risk, CDCC will make punctual margin calls vis-à-vis each Clearing Member if it determines that its intra-day exposure to that Clearing Member exceeds a certain limit in relation to their respective Initial Margin and their Clearing Fund contribution. Thereby, CDCC will compare, on a daily basis: 1) the Clearing Member's Intra-day VM amount to its Initial Margin and 2) the Clearing Member's Intraday VM amount to its Clearing Fund contribution and require, if applicable, punctual margin calls. Note that punctual margin calls for Intraday Variation Margin Risk could also be made at any other circumstances that CDCC deems appropriate.

Proposed criteria to trigger a margin call

As mentioned in the previous section, the first criteria will be linked to the Clearing Member Initial Margin. In fact, CDCC believes that a 25% threshold (subject to annual review) represents a reasonable compromise between the level of consumption of the Initial Margin and the frequency of calls. This selected value can be related, in a broad sense, to the concept of

[1] Bank for International Settlements: "Principles for Financial Market Infrastructures". April 2012.

maintenance margin[2] which requires a margin call when a percentage of the Initial Margin is consumed. This amount of collateral brings the account up to the Initial Margin amount once it drops below the maintenance margin.

The second criteria will be linked to the Clearing Member Clearing Fund contribution. Hence a margin call will also be requested if, for any Clearing Member, the under margined amount (unrealized VM loss) is higher than its Clearing Fund contribution[3].

Furthermore, it is also reasonable to impose a margin call floor in order to avoid frequent margin calls for low intra-day cash exposures. This floor amount would be set initially to $10M, as defined in the CDCC Impact scale document for the potential credit risk exposure category.

Operationalization

Margin calls will be calculated by CDCC and the required amounts will be collaterized in each Clearing Member's Difference Fund. Generally, CDCC will notify Clearing Members of additional margin requirements at 1:45 p.m. and impacted Clearing Member will have to cover any deficit by 2:45 p.m.

c. Proposed Amendments

The proposed amendments are presented in Appendix 1 and 2.

d. Benchmarking

CME Clearing[4]	CME Clearing performs Mark to Market (MtM) settlement variation for most products twice per day. CME Clearing reserves the right to execute Variation Margin settlement cycles more frequently as warranted by market conditions. CME Clearing also monitors MtM exposures throughout the day and night based on real time price and positions information to evaluate account level and clearing firm risks. This helps inform the decision of CME Clearing on whether to call for additional collateral thought ad hoc settlement cycles or additional margin calls.

2 The maintenance margin is the minimum amount a Futures trader is required to maintain in his margin account in order to hold a Futures position. The maintenance margin level is usually set between 75% and 90% of the Initial Margin. If the balance in the Futures trader's margin account falls below the maintenance margin level, the trader is required to deposit enough funds or collateral to bring the account back up to the Initial Margin requirement. Such a demand is referred to as a margin call.

3 This criteria is linked to the CDCC Impact Scale document (Moderate) for the potential credit risk exposure category.

4 http://www.cmegroup.com/clearing/risk-management/files/cme-clearing-principles-for-financial-market-infrastructures-disclosure.pdf

OCC[5]	OCC revaluates clearing member portfolios throughout the day to calculate updated account NAV (Net Option Value). In order to protect against extreme intra-day market volatility, OCC's Rules grant it the authority to issue intra-day margin calls. OCC notifies by phone each clearing member who is in a deficit condition as a result of an intra-day margin call and instructs the clearing bank to debit funds from such Clearing Member's account and credit OCC's account. The Clearing Member must satisfy the deficit within one hour. Generally speaking, margin calls are issued between 11:00 a.m. and 1:30 a.m., when unrealized losses are observed for an account, based on start-of-day positions, exceeding 50% of that account's total risk charges. Margin calls are subject to a minimum value of $25,000. Margin calls during this window must be approved by an officer of OCC. Margin calls outside of this window must be approved by the Senior Vice President—Risk Management, the Chief Risk Officer, the President & CEO or the Executive Chairman.
SGX-DC[6]	SGX-DC collects variation margin in addition to Initial Margin. Positions are MtM to the latest available market prices during the intraday and end-of-day cycles to prevent accumulation of losses throughout the day. SGX-DC determines for each participant's account, the net mark-to-market during each clearing cycle. For intraday margin calls, participants are required to fund these losses, but variation gains are withheld by SGX-DC. This prevents accumulation of variation losses. For the end-of-day cycle, the participant's profits and losses are settled on a net basis. Margin calls will be made to participants whose collateral is not sufficient to cover the variation loss. The margin call functionality is automated. It can be triggered on a scheduled or ad hoc basis to determine the intraday/end-of-day margin calls for initial and variation margin. Once triggered, the system compares the collateral holdings of each member against the margin requirements of the participant. Intraday margin call will be calculated using updated prices and positions.

III. PRIMARY MOTIVATION

The primary motivation behind the proposal is to ensure CDCC compliance with PFMI requirements for Variation Margin.

[5] http://www.optionsclearing.com/components/docs/risk-management/pfmi-disclosures.pdf

[6] http://www.imf.org/external/pubs/ft/scr/2013/cr13345.pdf

IV. IMPACTS ON TECHNOLOGICAL SYSTEMS

There are no direct impacts on technological systems since the analytic tools to support intra-day Risk Management Process are developed and tested internally by CDCC, separately from CDCC's current technological systems.

V. OBJECTIVES OF THE PROPOSED MODIFICATIONS

The driving force behind the proposal is to give CDCC the authority and operational capacity to make intra-day margin calls.

VI. PUBLIC INTEREST

In CDCC's opinion, the proposed amendments to CDCC's Operations Manual and Risk Manual are not contrary to the public interest.

VII. MARKET IMPACTS

These proposed changes will enable CDCC to mark participant positions to market and collect, if required, intra-day Variation Margin to limit the build-up of current exposures of Clearing Members.

The implementation of intra-day margin calls will require Clearing Members to responds quite promptly. These amounts may be substantial and Clearing Members will need to review their collateral management strategies.

VIII. PROCESS

The proposed amendment is submitted for approval by the CDCC Board. Once the approval has been obtained, the proposed amendment, including this analysis, will be transmitted to the Autorité des marchés financiers in accordance with the self-certification process and the Ontario Securities Commission in accordance with the "Rule Change Requiring Approval in Ontario" process. The proposed amendment and analysis will also be submitted for approval to the Bank of Canada in accordance with the Regulatory Oversight Agreement.

IX. EFFECTIVE DATE

The proposed changes to address the intra-day variation margin exposure are supposed to be implemented in the first quarter of 2015. This is subject to regulatory approval.

X. ATTACHED DOCUMENTS

Appendix 1: Amended Operational Manual
Appendix 2: Amended Risk Manual

APPENDIX 1

CANADIAN DERIVATIVES CLEARING CORPORATION
CORPORATION CANADIENNE DE COMPENSATION DE PRODUITS DÉRIVÉS

OPERATIONS MANUAL

VERSION OF ~~AUGUST 1~~, 2014

ON EVERY BUSINESS DAY (continued)

Activity	**Deadlines**
Futures – Request for Standard vs Mini Offset	5:00 p.m.
Futures – Tender Notices submission	5:30 p.m.
Options – Exercise Notices submission	5:30 p.m.
CDCC Clearing Application shutdown – Close of Business	5:30 p.m.
Fixed Income Transactions – available (next Business Day start)	7:00 p.m.

Unsettled Item

Confirmation of settled items to be sent to CDCC	4:15 p.m.

Daily Capital Margin Monitoring Calls

CDCC notifies Clearing Members of additional Margin required	9:30 a.m.
Clearing Member's obligation to cover any deficit	12:00 (noon)

Additional Margin for Intra-Day Variation Margin Risk

CDCC notifies Clearing Members of additional Margin required	1:45 p.m.
Clearing Member's obligation to cover any deficit	2:45 p.m.

TIME FRAMES FOR ON-LINE ACCESS (continued on next page)

DIFFERENCE FUND

The Difference Fund is Margin Deposits held by CDCC as discretionary margin, such as: (1) Unsettled Items Margin, (2) Daily Capital Margin Monitoring, (3) Advance calls for settlement of losses, (4) OTCI Additional Margin, ~~and~~ (5) Intra-Day Margin, and (6) Additional Margin for Intra-Day Variation Margin Risk. CDCC accepts Deposits to the Difference Fund in the forms of Margin set forth in Section A-709 of the Rules, in the proportions specified therein.

(1) Unsettled Items Margin

Security Funds, as such term is defined in Sections B-401, C-501 and D-301 of the Rules, corresponding to an amount equal to not less than 105% of the market value of the Underlying Interest which a Clearing Member has failed to timely deliver, in accordance with Sections B-412, C-517 and D-307 respectively of the Rules.

(2) Daily Capital Margin Monitoring

The amount by which the Margin requirements of a Clearing Member exceeds its capital, in accordance with Section A-710 of the Rules.

(3) Advance Calls for Settlement of Losses

An amount that CDCC estimates will be needed to meet losses resulting from particular marked conditions or price fluctuations, in accordance with Section C-303 of the Rules.

(4) OTCI Additional Margin

An amount representing the premium value collected from the Buyer before an OTCI Option is confirmed, which amount shall be available for withdrawal the morning after the Transaction has been processed, in accordance with Section D-107 of the Rules.

(5) Intra-Day Margin

Additional margin may be requested from a Clearing Member, at CDCC's sole discretion at any time and from time to time as it deems appropriate, due to some adverse change in the market of a given Underlying Interest or in the financial position of the Clearing Member, in accordance with Section A-705 of the Rules.

(6) Additional Margin for Intra-Day Variation Margin Risk

Additional margin will be applied to Futures contracts where Intra-Day Variation Margin Risk, as defined in the Risk Manual, arises.

Deposits, Withdrawals, Substitutions

Deposits, withdrawals and substitutions of assets (other than cash) in the Difference Fund are made in the same manner and subject to the same deadlines as Margin Fund deposits, withdrawals and substitutions of assets (other than cash), in accordance with Section 2 of this Operations Manual.

Note:
Information with respect to the Margin Fund is to be found in the Risk Manual, Schedule A of this Operations Manual.

APPENDIX 2

TMX | CDCC

Risk Manual

Glossary

Margin Interval: Parameter established by the Corporation which reflects the maximum price fluctuation that the Underlying Interest could be expected to have during the liquidation period. The Margin Interval (MI) calculations are based on the historical volatility of the Underlying Interest and these calculations are re-evaluated on a regular basis. If necessary, the Corporation may update the Margin Intervals more frequently. The Margin Interval is used to calculate the Initial Margin of every Derivative Instrument.

Haircut: Percentage discounted from the market value of Securities pledged as collateral for Margin Deposit. The discount reflects the price movement volatility of the collateral pledged. Thus, this reduction assures that even if the collateral's market value declines, there is time to call for additional collateral to adjust its value to the required level.

Initial Margin: The Initial Margin covers the potential losses that may occur over the next liquidation period as a result of market fluctuations. The Initial Margin amount is calculated using the historical volatility of the Underlying Interest return for Options contracts, futures prices for Futures contracts and yield-to-maturity (YTM) of the on-the-run security for Fixed Income Transactions.

Variation Margin: The Variation Margin takes into account the portfolio’s liquidating value (this is also known as the Replacement Cost or RC) which is managed through the Mark-to-Market daily process.

Price Scan Range: The maximum price movement reasonably likely to occur, for each Derivative Instrument or, for Options, their Underlying Interest. The term PSR is used by the Risk Engine to represent the potential variation of the product value and it is calculated through the following formula:

PSR = Underlying Interest Price x MI x Contract Size

Volatility Scan Range: The maximum change reasonably likely to occur for the volatility of each Option's Underlying Interest price.

Risk Array: A Risk Array (RA) is a set of 16 scenarios defined for a particular contract specifying how a hypothetical single position will lose or gain value if the corresponding risk scenario occurs from the current situation to the near future (usually next day).

Combined Commodity: The Risk Engine divides the positions in each portfolio into groupings called Combined Commodities. Each Combined Commodity represents all positions on the same ultimate Underlying Interest – for example, all Futures contracts and all Options contracts ultimately related to the S&P/TSX 60 Index.

Scanning Risk: The Risk Engine chooses the difference between the current market value of an Underlying Interest and its most unfavourable projected liquidation value obtained by varying the values of the Underlying Interest according to several scenarios representing adverse changes in normal market conditions.

Active Scenario: The number of the Risk Arrays scenario that gives the largest amount (worst case scenario).

Short Option Minimum: Rates and rules to provide coverage for the special situations associated with portfolios of deep out-of-the-money short option positions. This amount will be called if it is higher than the result of the Risk Arrays.

Liquidity Interval: The Liquidity Interval is calculated based on the historical bid-ask price spread of the Underlying Interest according to the same formula for Margin Interval.

Buckets: All Acceptable Securities of Fixed Income Transactions that behave in a similar manner are grouped together into "Buckets" and each Bucket behaves as a Combined Commodity. Acceptable Securities are bucketed according to their remaining time to maturity and issuer. Due to the nature of the bucketing process, the Acceptable Securities' assignation will be dynamic in that they will change from one Bucket to the other as the Acceptable Security nears maturity.

MTM Price Valuation: The MTM Price Valuation is the difference between the market value of the Security and the funds borrowed. This amount is collateralized and should be credited (or debited) to the Repo Party's Margin Fund and debited (or credited) to the Reverse Repo Party's Margin Fund.

Intra-Commodity (Inter-Month) Spread Charge: Underlying Interests' prices, from a maturity month to another are not perfectly correlated. Gains on a maturity month should not totally offset losses on another. To fix this issue, the Risk Engine allows the user to calculate and to apply a margin charge relative to the Inter-Month spread risk in order to cover the risk of these two positions.

Inter-Commodity Spread Charge: The Corporation considers the correlation that exists between different classes of Futures contracts when calculating the Initial Margin. For example, different interest rate Futures contracts are likely to react to the same market indicators, but at different degrees. For instance, a portfolio composed of a long position and a short position on two different interest rate Futures contracts will be likely less risky than the sum of the two positions taken individually.

Clearing Engine: The Corporation uses SOLA® Clearing as its Clearing Engine.

Risk Engine: The Corporation uses the Standard Portfolio Analysis system (SPAN®) as its Risk Engine.

Intra-day Variation Margin Risk: The Corporation considers this risk as the intra-day risk arising in circumstances in which market volatility or surges in trading volumes produce unusually large Variation Margin exposures.

The terms and concepts herein defined, as used in this Risk Manual, are derived from the CME Group proprietary SPAN® margin system, adapted for CDCC's licensed use thereof.

ACCOUNT STRUCTURE

The Corporation uses three types of accounts for Margin calculation purposes and positions management: Firm Account, Multi-Purpose Account and Client Account. All the account types are treated on a net account basis for Futures contracts, OTCI and Fixed Income Transactions. However, Options contracts are treated differently depending on the account type they are held in. If they are held in a Firm Account or a Multi-Purpose Account, they are treated on a net account basis, whereas if they are held in a Client Account, they are treated on a gross account basis, which means that only short Options contracts are considered when computing the Initial Margin.

Gross accounts allow calculation of Initial Margin for different clients that clear through one Clearing Member. Since each client has its own risk profile, the Initial Margin must be computed separately for each client and must not allow offsets between positions that belong to different clients. Subsequently, only Short Positions in Options contracts are considered when calculating the Initial Margins for the Client Account.

Net accounts allow calculation of Initial Margin for the Clearing Member's own positions (Firm Account), for a Market Maker positions (Market Maker Account) or for the positions of a particular single Client (Netted Client Account). In this case, the Initial Margin must consider the possible offsets between all positions. Therefore, all positions held in one Firm Account or one Multi-Purpose Account are used to calculate the Initial Margin for this account.

The Initial Margins calculated for each account are then aggregated at the Clearing Member level to get the Initial Margin by Clearing Member.

In order to cover the Initial Margin described above, Clearing Members shall deposit an acceptable form of Deposits in accordance with Section A-709 of the Rules.

Additional Margin for Intra-Day Variation Margin Risk

In order to address the Intra-Day Variation Margin Risk[1], CDCC makes additional margin calls vis-à-vis each Clearing Member if it determines that it's intra-day exposure to the Clearing Member exceeds a certain limit (threshold in percentage) in relation to their respective Initial Margin or their Clearing Fund contribution. Margin calls are subject to a minimum value (floor). Thereby, CDCC will compare the Clearing Member's Intra-Day Variation Margin amount to its Initial Margin and its Clearing Fund contribution on a daily basis and requires, if necessary, additional margin calls. Additional calls for Intra-Day Variation Margin Risk could also be used in any other circumstances that CDCC deems appropriate.

[1] This margin is applying only on Futures contracts.

DIFFERENCE FUND

As defined in Section 8.2 of the Operations Manual, the Difference Fund is Margin Deposits held by the Corporation as discretionary margin, such as: (1) Unsettled Items Margin, (2) Daily Capital Margin Monitoring, (3) Advance calls for settlement of losses, (4) OTCI Additional Margin, ~~and~~ (5) Intra-Day Margin, and (6) Additional Margin for Intra-Day Variation Margin Risk. The Corporation accepts Deposits to the Difference Fund in the same form and proportion as for the Margin Fund, as set forth in Section A-709 of the Rules.

Despite the fact that the Difference Fund is used to cover all the above elements, the sub-section regarding the Daily Capital Margin Monitoring intends to capture the credit risk. Consequently, this sub-section is described in details thereunder.

Daily Capital Margin Monitoring:

The Corporation measures the credit exposure to its Clearing Members on a daily basis through the Daily Capital Margin Monitoring Calls (the Difference Fund). The capital level is derived from regulatory reports received on a monthly basis in a timely manner (and on a quarterly basis if it is a Bank Clearing Member).

As prescribed in Section A-710 of the Rules, the Corporation may call for a contribution in the Difference Fund from Members that are undercapitalized in relation to their respective Initial Margin. The Corporation compares the Clearing Member's capital amount to the Initial Margin on a daily basis and requires, if applicable, that the Clearing Member makes up any difference in the form of acceptable Deposits. Each Clearing Member's capital is analyzed and updated on a monthly basis.

In order to determine the contribution to the Difference Fund of Clearing Members, the Corporation uses the Net Allowable Assets (NAA). The Net Allowable Asset is a more restrictive type of capital, since it is the net result of the financial statement capital less the non allowable assets. Non allowable assets are composed of less liquid assets like capitalized leases, Investments in and Advances to Subsidiaries, etc. For Bank Clearing Members, the Corporation uses the Net Tier 1 capital.

The Corporation has access to the Clearing Member's financial statements from the CIPF (Canadian Investor Protection Fund), and the OSFI (Office of the Superintendent of Financial Institutions Canada) for Bank Clearing Members.

In addition to the monthly update of capital numbers, the Corporation performs a qualitative analysis of the financial statements of each member. The Corporation has defined specific thresholds to analyze the profitability, the margin required, the liquidity and the capital level. The Corporation could ask Clearing Members for more clarifications, if necessary.

Indeed, Investment Industry Regulatory Organization of Canada (IIROC) evaluates the financial condition of its Members. If an IIROC Member, who is also a Clearing Member, fails the tests designed to detect the risk of insolvency, the Corporation will be notified by IIROC. The Clearing Member itself shall also advise the Corporation immediately if it enters in an early warning level situation. IIROC may issue two types of warning, early warning level 1 or 2. This is function of the severity of the financial deficiency. The Corporation will be informed by IIROC and will closely monitor the situation. IIROC may impose sanctions or restrictions against the Member. The Corporation will judge if it necessary to take any additional actions and will report the situation to the Risk Management and Advisory Committee (RMAC).