Portfolio Margin Calculator (PMC) User Guide

Version 2.9
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Contents

Overview

The Portfolio Margin Calculator is used by OCC clearing members and external users to calculate portfolio-based margin requirements. A user can enter or upload positions that will generate Customer Portfolio Margin or Risk Based Haircut requirements. Once the total requirement is calculated, users have the ability to view details at the Portfolio/Product Group, Class Group, Contract, and Basket levels.

The application utilizes the RBH CPM, RBH Broker-Dealer, and RBH Market-Maker Theoretical Profit/Loss Data files to calculate broker-dealer and market-maker RBH or CPM requirements. In conjunction with the aforementioned theoretical data, users can either enter positions manually or upload an ASCII or CSV formatted position file. Users can also combine manually edited positions with an uploaded position file. After positions are entered on the screen, users can save this data to their local drive in either ASCII or CSV file format for future use. Once a total requirement is calculated, the results are displayed and the user has the capability to view more granular details of the calculated requirement on their screen or export it as a CSV or PDF formatted file.

Accessing the Portfolio Margin Calculator

Clearing members and public users may access the Portfolio Margin Calculator via OCC's public website.

Follow these steps to access the Portfolio Margin Calculator:

1. Click www.theocc.com.
2. In the Risk Management menu, click **Portfolio Margin Calculator**.
3. Click **Launch the Portfolio Margin Calculator**.
4. Review the content in the Disclaimer window, then click **OK**.
   The Portfolio Margin Calculator window appears.

Introduction to the Positions Editor

You can use the Positions Editor to view the available contracts, maintain selected positions, and calculate portfolio margin requirements.

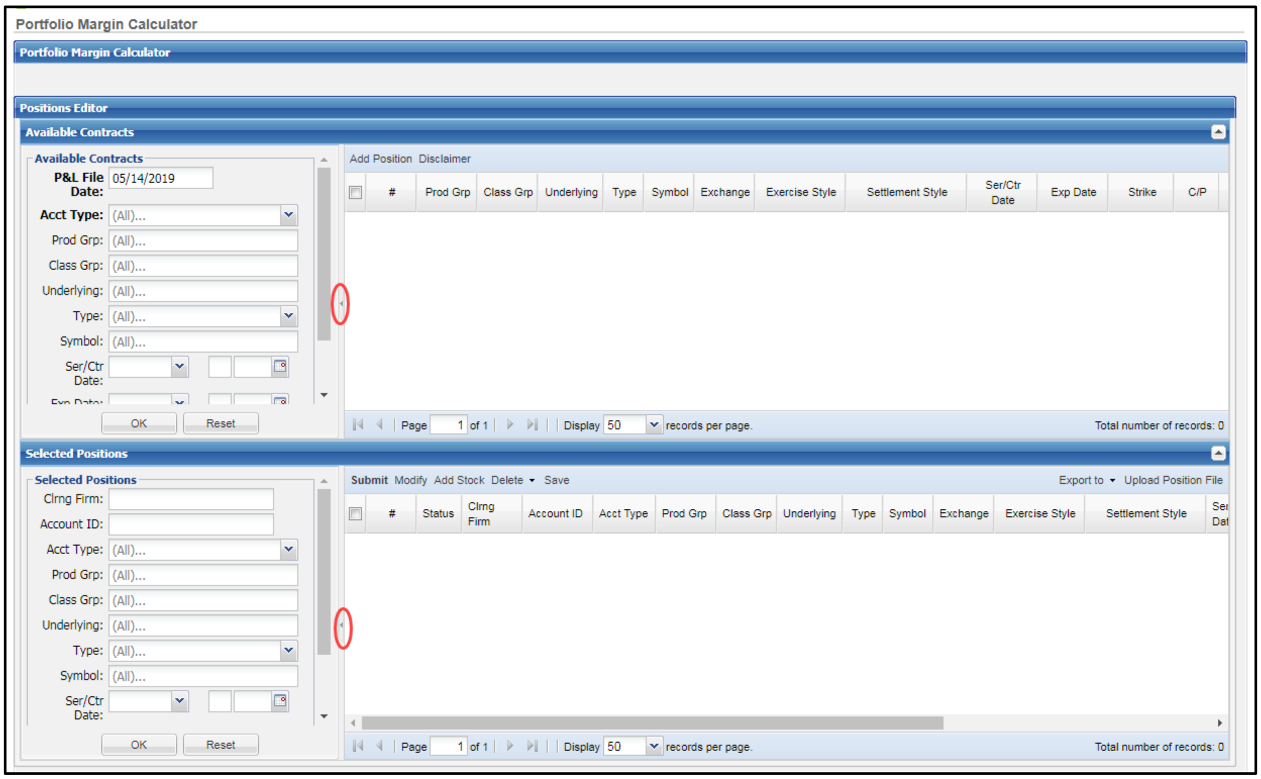


Figure 1: Positions Editor

Notes:

- Click the arrows on the upper right side of the Available Contracts or Selected Positions title bars to expand or collapse each window.

- To hide the filter pane, click the arrow icon (circled in red in the above screen example) to the left of the list view.

- If you sort data within tabs, you can return to the default sort by clicking on the first sortable column heading.

Available Contracts

The Available Contracts window displays data from a specific P&L File date and account type: customer (CPM), broker-dealer/firm (RBH-BD), or market maker (RBH-MM (M)). The filter uses auto suggestion logic.

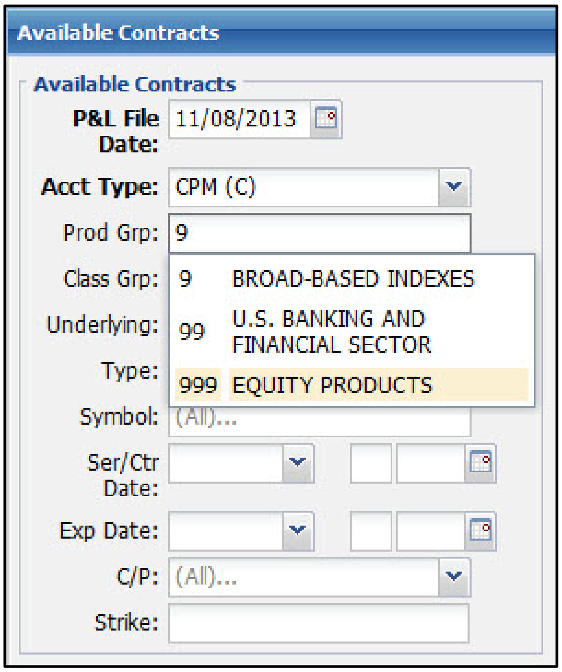


Figure 2: Available Contracts Filter

The list view displays the contracts meeting the filter criteria.

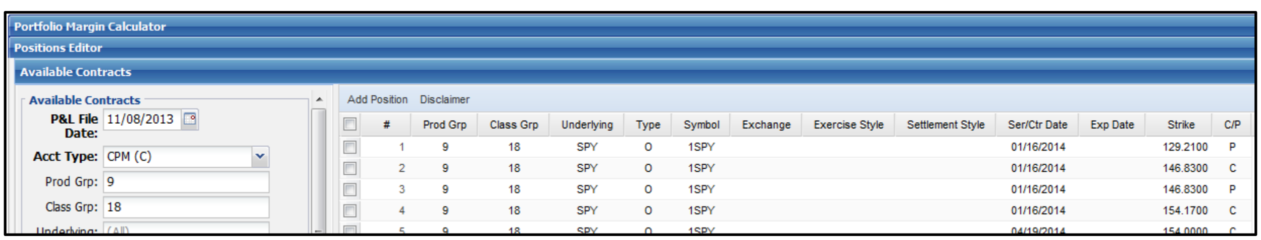


Figure 3: Available Contracts List View

Selected Positions

The Selected Positions window allows you to enter position quantities, basket IDs, non-included stocks, and modify certain information, and then submit the positions for portfolio margin requirement calculations given the criteria entered.

Position quantities need to be entered to run the calculation. When positions are moved from the Available Contracts list view to the Selected Positions list view, the default quantities are zero.

You can add positions by either filtering and selecting available contracts manually or by uploading a CSV or ASCII format position files.

Once a portfolio is submitted, the results display on a Results tab. You can toggle between the Results and Position details. You can also export the results into a PDF or CSV file.

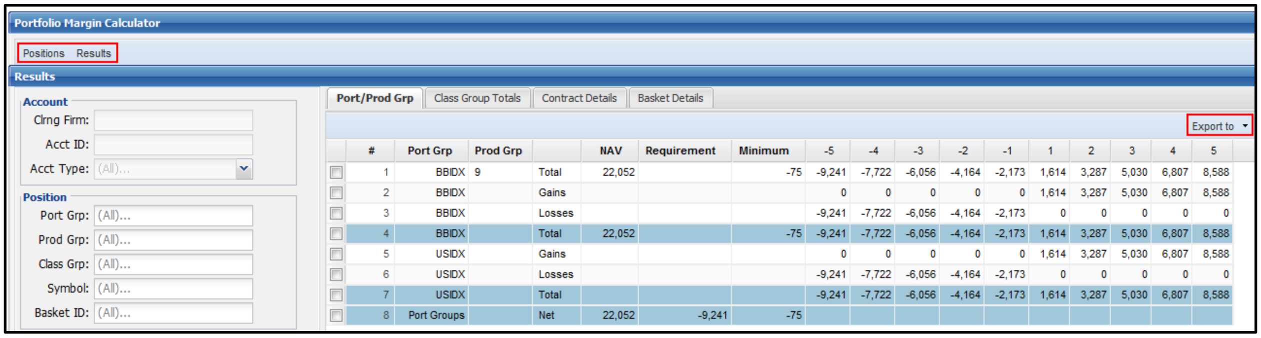


Figure 4: Results

Portfolio Margin Calculation

Complete the following high-level steps to calculate portfolio-based margin requirements:

1. View available contracts.
2. Build a portfolio, either by manually adding positions or uploading them from a file.
3. Maintain the selected positions through filtering them and updating quantities, as needed.
4. Calculate and review portfolio margin requirements.

View Available Contracts

Use the Available Contracts filter in the Positions Editor to select available series, contract, and stock data for a specific P&L File date and account type.

Note: The following fields are required for the Available Contracts filter: **P&L File Date, Acct Type**, and one of the following categories: **Class Grp**, **Underlying**, or **Symbol**.

Follow these steps to view available contracts:

1. On the Available Contracts filter, select the **P&L File Date** (defaults to the most recent P&L file activity date). Only the most recent P&L File Date is available on the public site.
2. Select the **Acct Type** for which you would like to filter: Valid values are CPM (C), RBH-BD (F), or RBH-MM (M).
3. Select a Product Group (**Prod Grp**).
4. You must select one of the following fields:
    - Class group (Class Grp)
    - Underlying symbol
    - Trading Symbol

    Note: If you filter by Product Group **(Prod Grp**), a class group **(Class Grp)** is required.
5. Select the instrument **Type**, the series/contract date (**Ser/Ctr Date**), and/or the expiration date (**Exp Date**).
6. Select whether you want to view Calls, Puts, or Both (**C/P**) and enter the valid **Strike** dollar amount (only valid for options).
7. Click **OK**.

    Contracts that meet the filter criteria appear in the Available Contracts list view.

    Note: You can sort the results by clicking a column heading. To return to the default sort, click the first sortable column heading.

Note: OCC enhanced PMC file processing beginning December 6, 2013. Files with a P&L File Date prior December 6, 2013 are displayed with the following limitations:

- Warrants appear as options. Filtering for instrument type **Warrant** in the Available Contracts filter will not return results. Also, the **Type** column in the Available Contracts list view contains **O** rather than **W**.
- Foreign Marginable Securities (FMS) appear in the Available Contracts list view with a temporary **Symbol**, such as 91234, and the Exchange is not listed.

All fields in the Available Contracts list view are for display only; they are not editable.

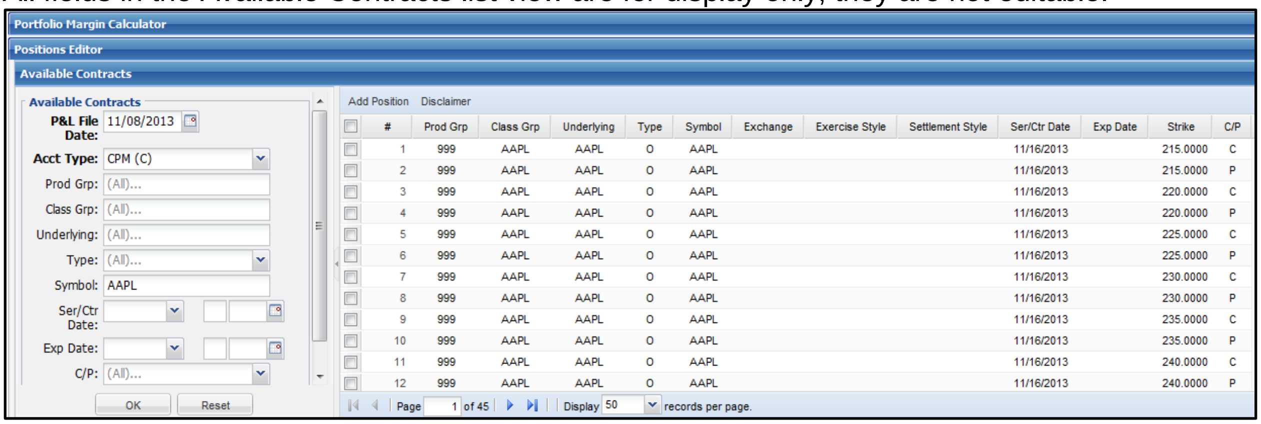


Figure 5: Available Contracts List View

Build a Portfolio

In order to generate a requirement, a portfolio is required. You can build a portfolio by adding positions manually through the Available Contracts list view or by uploading them from a position file.

Manually Adding Positions

To manually add positions to a portfolio in order to calculate a requirement, select each desired contract in the Available Contracts list view so that a checkmark appears and then click **Add Position**. The selected contracts will subsequently appear in the Selected Positions list view.

Uploading Position Files

You can also import a CSV or ASCII position file in order to generate portfolio margin requirements.

Follow these steps to upload a position file:

1. Click **Upload Position File** in the Selected Positions list view. A dialog box displays, containing a browser to upload the file and a list of the Process Results.

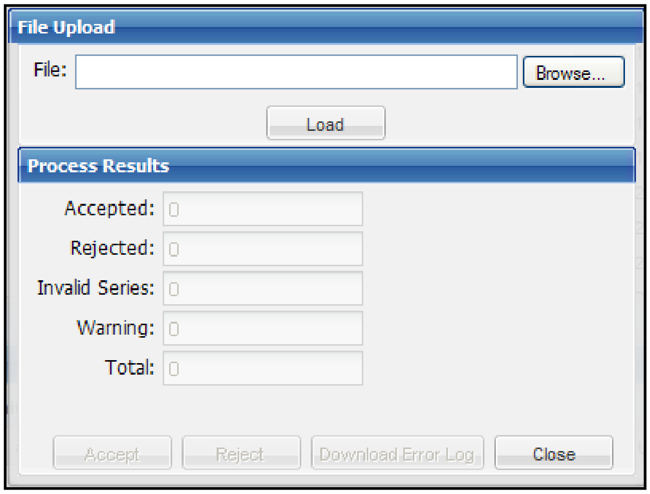


Figure 6: File Upload and Process Results

2. Click **Browse** to locate and select the file you want to upload.

3. Click **Load**. The results include:

   - Records Accepted.
   - Records Rejected.
   - Invalid Series: Record rejected because the contract specifics do not match master file data from the selected P&L File date.
   - Warnings.
   - Total Records.

4. Once the records have been verified, click **Accept** or **Reject**. The uploaded positions display in the Selected Positions list view.

   Note: Only accepted positions are submitted for requirement calculation. If there are errors, you can verify the error details by clicking **Download Error Log**.

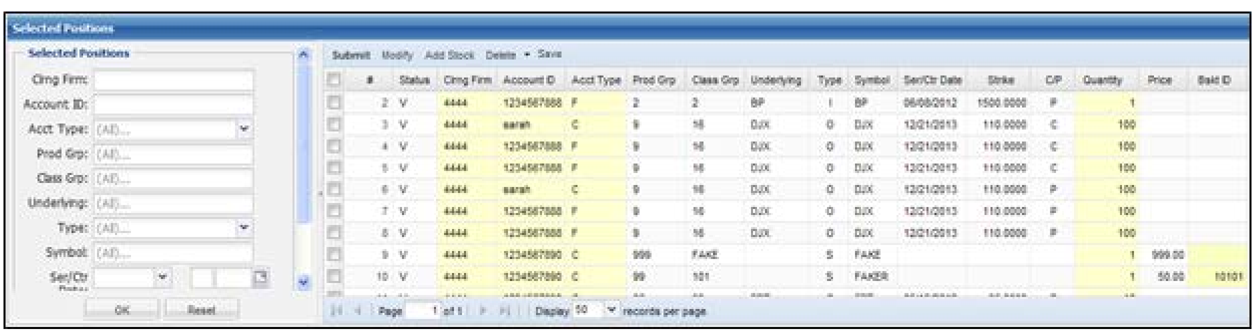


Figure 7: Selected Positions List View

Maintain Selected Positions

After you have loaded positions either by selecting them through the Available Contracts list view or by uploading them from a file, you can filter the list of positions and modify them, as needed, before submitting the portfolio for calculation. Once a portfolio is created in the list view, you can filter the positions, update quantities, modify positions, add stock records, or delete a record.

Filtering Selected Positions

Use the Selected Positions filter to filter positions that have been uploaded or available contracts that have been added via the Available Contracts filter.

Follow these steps to filter selected positions:

1. On the Selected Positions filter, enter the clearing firm (**Clrng Firm**) and **Account ID**, then select the account type (**Acct Type**).
2. Enter the product group (**Prod Grp**), **Class Grp**, or **Underlying** symbol.
3. Select the instrument **Type** and enter the trading **Symbol**.
4. Select the series/contract date (**Ser/Ctr Date**) and the expiration date (**Exp Date**).
5. Select whether the contract is a Call or Put (**C/P**) and enter the valid **Strike** dollar amount (only valid for options).
6. Click **OK**.

   Your search results display in the Selected Positions list view.

   Note: OCC enhanced PMC file processing beginning December 6, 2013. Files with a P&L File Date prior December 6, 2013 are displayed with the following limitations:

   - Warrants appear as options. Filtering for instrument type **Warrant** in the Selected Positions filter will not return results. Also, the **Type** column in the Selected Positions list view contains **O** for warrants rather than **W**.
   - Foreign Marginable Securities (FMS) appear in the Selected Positions list view with a temporary **Symbol**, such as 91234, and the Exchange is not listed.

Updating Quantities

Once available contracts are in the Selected Positions list view, the quantities can be changed. In order for the application to calculate a requirement, the quantities in the Selected Positions list view must not equal zero.

Follow these steps to update selected positions quantities:

1. Click on the **Quantity** field (the default is 0) in the Selected Positions list view.
2. Enter the new number.

3. After you have updated the records, click **Save**.

Modifying Positions

You can change certain values in selected positions. Fields that can be changed are clearing firm number, account ID, account type, and basket ID.

Follow these steps to modify selected positions information:

1. Select the records that you want to modify in the Selected Positions list view.
2. Click **Modify**.

   The Modify Position Record(s) window appears.

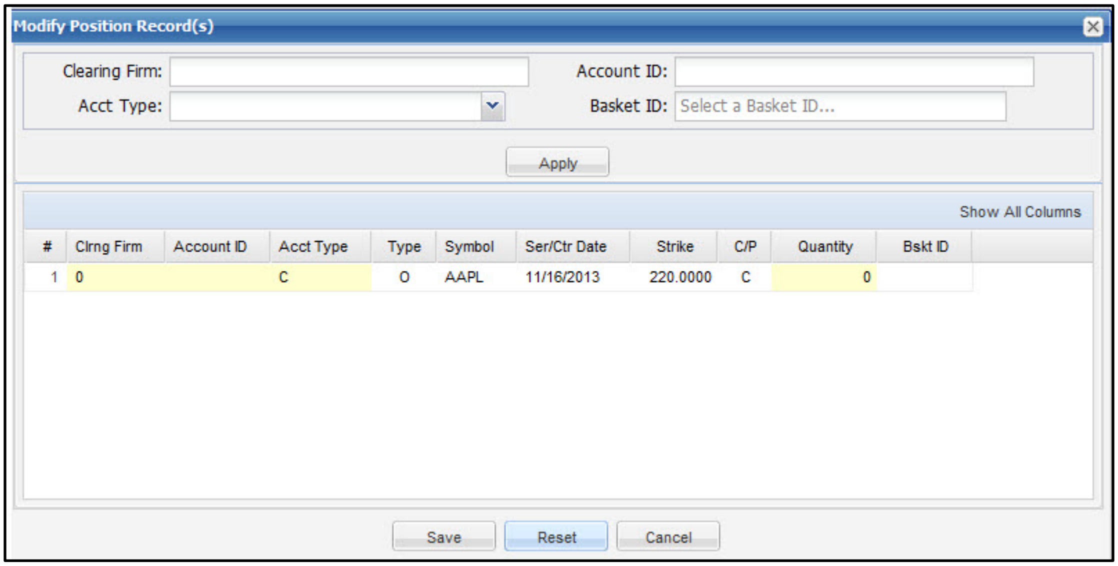


Figure 8: Modify Position Record(s) window

3. Enter a new **Clearing Firm, Account ID, Acct Type**, or **Basket ID**.
4. Click **Apply**. The records are updated in the lower half of the window.
5. Click **Save**.

   The Modify Position Record(s) window closes, and the records are modified in the Selected Positions list view.

Adding Stock Records

You can add a stock record that was not included in the date's P&L files to the portfolio.

Follow these steps to add stock records that are not included in the P&L file:

1. Click **Add Stock** in the Selected Positions list view.

   The Add Stock Loan window appears.

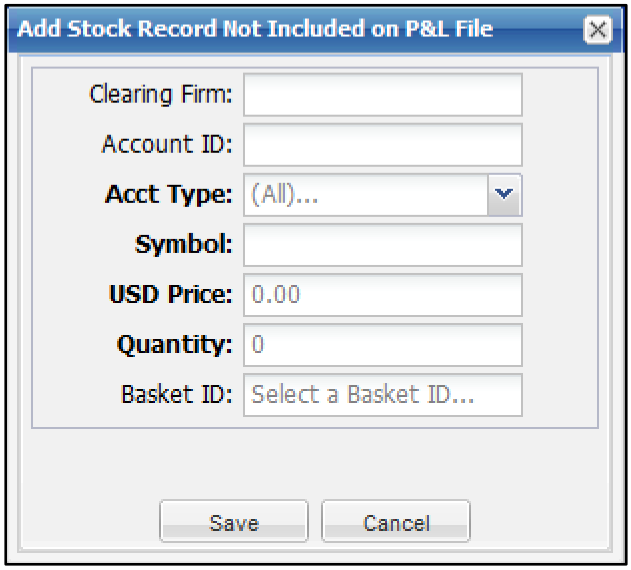


Figure 9: Add Stock Record Not Included on P&L File window

2. Enter the **Clearing Firm** and **Account ID**.

3. Enter an **Account Type**, **Symbol**, **USD Price**, and **Quantity.** (All four fields are required.)

4. Enter a **Basket ID**.

5. Click **Save**.

   Note: Stocks already included in the P&L File data are not permitted to be added to positions via this function; you must use the Available Contracts Filter to add stock records that display on the P&L File. If you attempt to add stocks that are already included in the file, the system displays the following message:

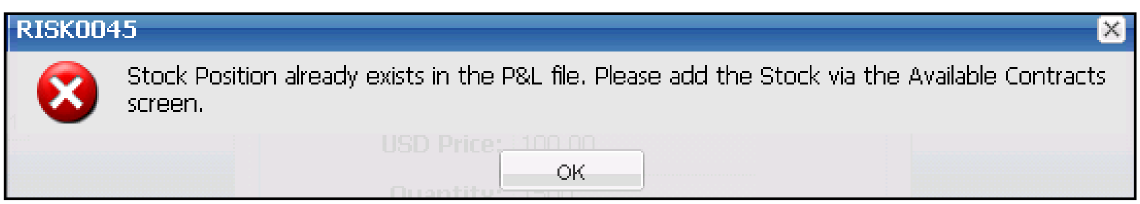


Figure 10: Warning message

Delete Records

Follow these steps to delete selected positions records:

1. Select the position record(s) that you want to delete in the Selected Positions list view.

2. Click **Delete**, and then select **All** or **Selected**.
3. In the Delete confirmation window, click **Yes**.

   The specified records are removed from the Selected Positions list view.

Export Records

Follow these steps to export the selected position records in either CSV or ASCII file formats:

1. Select the position records that you want to export in the Selected Positions list view.
2. Click **Export to** and then click **CSV** or **ASCII**.

   Note: FMS positions require a symbol plus exchange to resolve. Therefore, FMS symbols cannot be exported to ASCII position files.

3. In the File Download window, click **Open** to view the exported file, or click **Save** to open the Save As window and indicate where you want to save the exported file.

   Note: You can make changes to the export file, if necessary, and then upload it back in the PMC module.

Calculate Portfolio Margin Requirements

The system enables you to generate portfolio margin requirements for selected positions. After you submit the portfolio, the calculated results display in the Portfolio Margin Calculator screen. Refer to the RBH Guide for help with interpreting the results.

Follow these steps to calculate portfolio margin requirements and filter the results:

1. In the Selected Positions list view, click **Submit** to generate the portfolio margin requirements for selected positions.

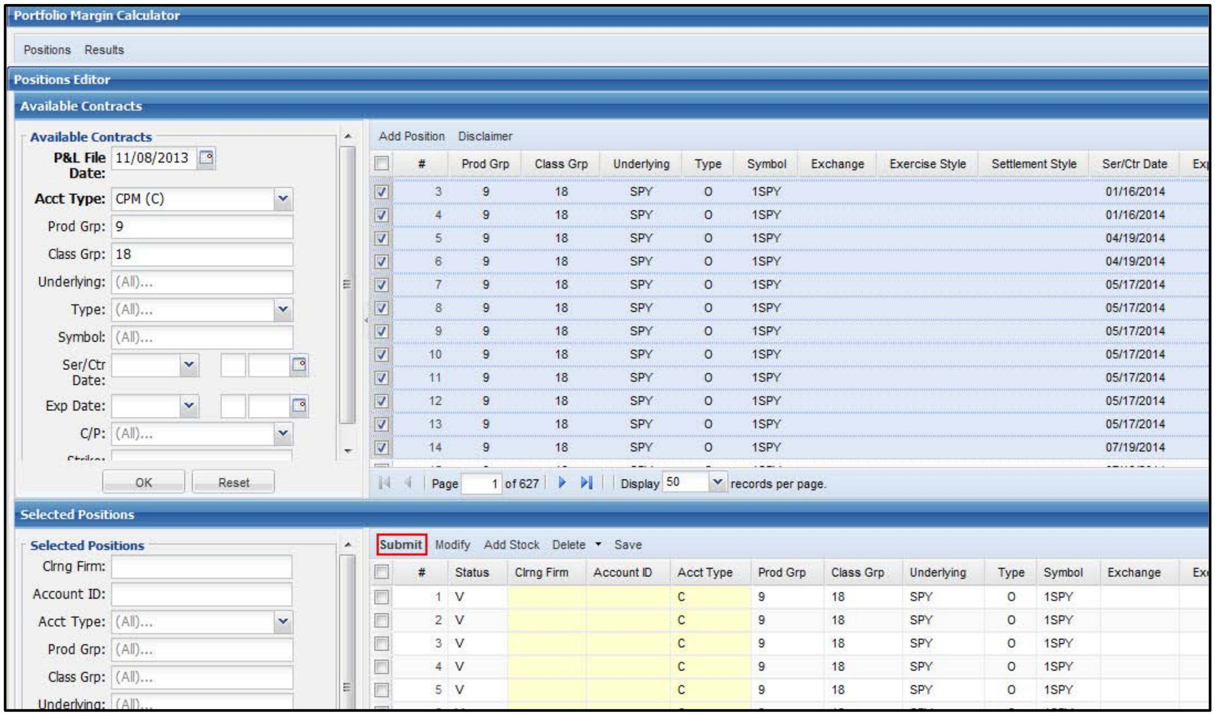


Figure 11: Selected Positions

The **Results** screen appears.

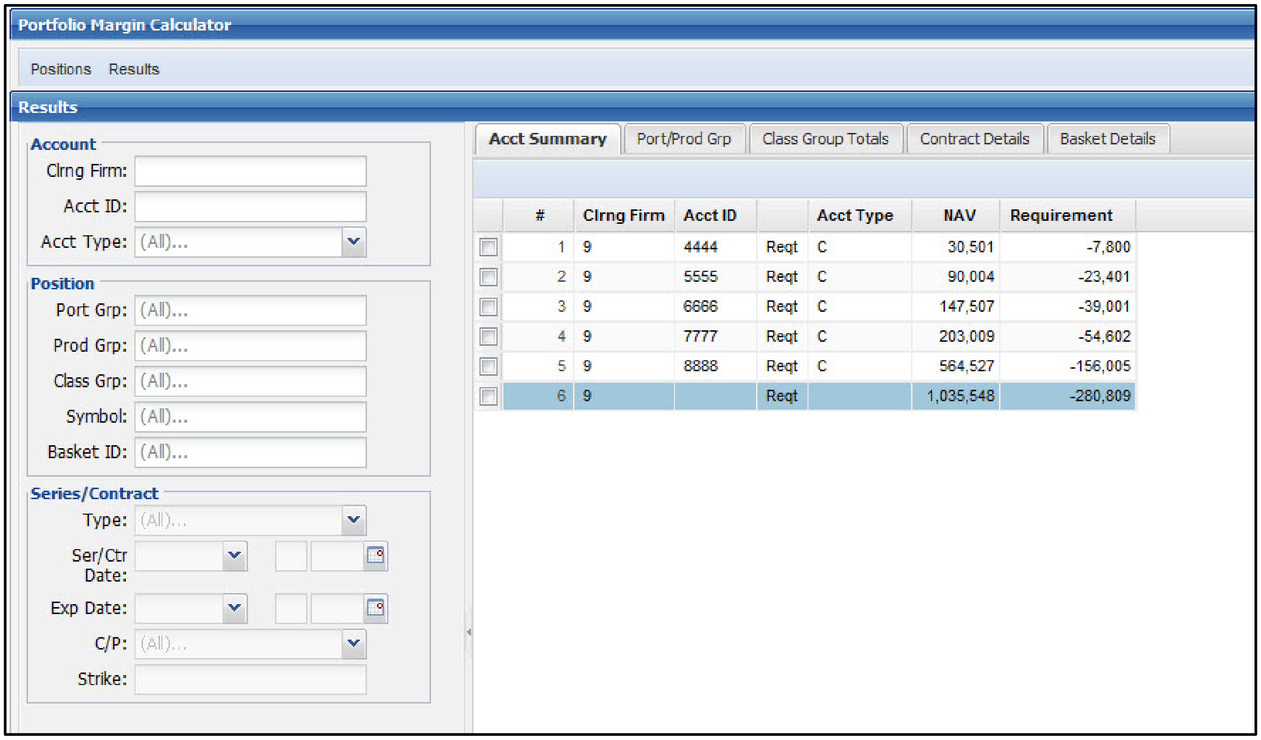


Figure 12: Summary Results

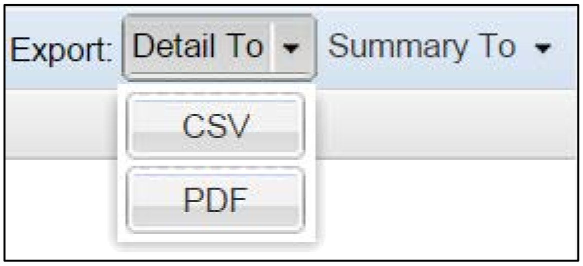
2. Enter filter criteria to narrow the information that appears in the tabs.

3. In the **Acct Summary** tab, select the account for which you want to see additional details.

4. Click the other tabs to view the following information:

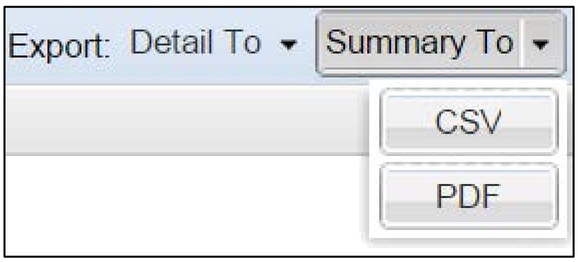
   - **Port/Prod Grp** tab: Aggregate NAV and Risk Requirement for portfolio and product groups.
   - **Class Group Totals** tab: NAV, Minimum Requirement, and -5/+5 P/L intervals for class groups.
   - **Contract Details** tab: NAV, Minimum, and -5/+5 P/L intervals for individual contracts.
   - **Basket Details** tab: NAV, Minimum, and P&Ls of stock positions included in the selected basket. You must select a basket from Contract Details tab in order to access the Basket Details tab.

5. Click **Export: Detail To** in the upper right corner to export the result details to a PDF or CSV file.



Note: Exported PDF files do not include the **Exchange** field, and the **Requirement** field appears in rows for each class group, product group, account, and clearing firm. However, exported CSV files include both the **Exchange** and **Requirement** fields as columns.

6. Click **Summary To** in the upper right corner to export the summary to a PDF or CSV file.



Note: You can click the **Positions** and **Results** buttons above the Results filter in the upper left corner of the screen to toggle between the selected positions and the calculated requirements results.

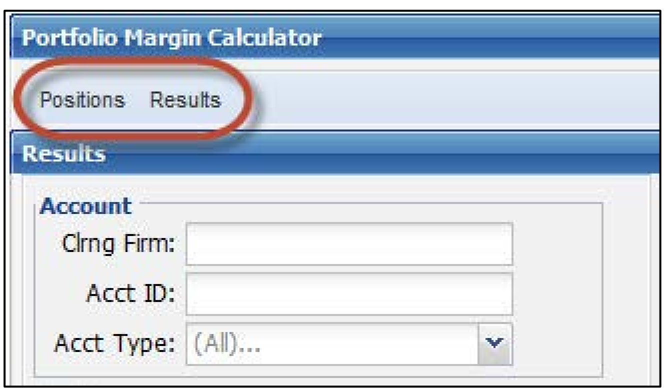


Figure 13: Positions and Results Buttons

Appendix A: Portfolio Margin Calculator Screens

This appendix describes the filters associated with the Portfolio Margin Calculator.

Available Contracts Filter

The Available Contracts filter returns a list of available contracts matching the search criteria that you enter.

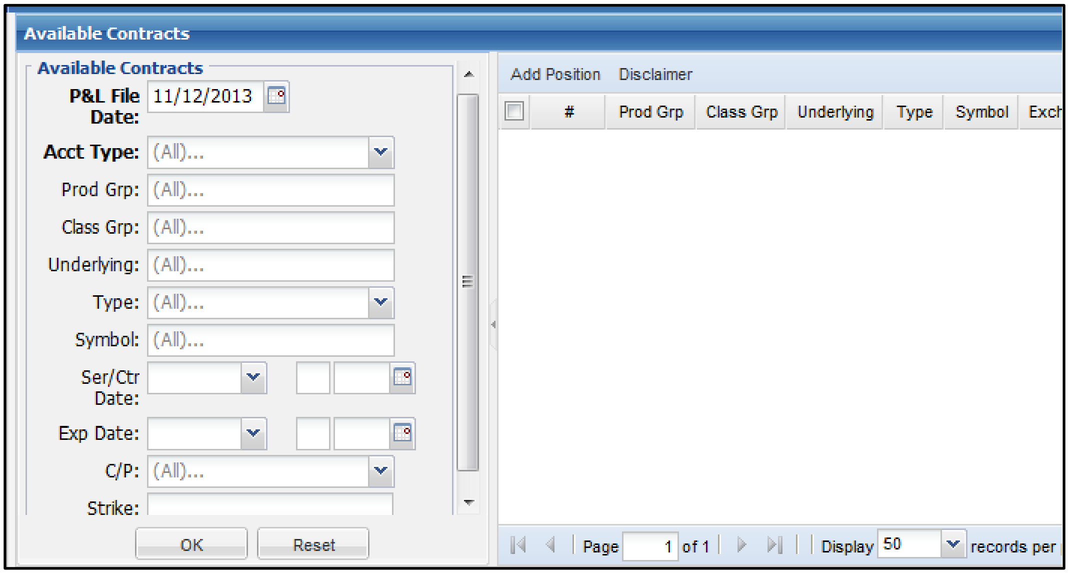


Figure 14: Available Contracts Filter Screen

Item	**Description**
P&L File Date	Activity date of the Theoretical P&L File. Defaults to the most recent activity date. Only the most recent P&L File is available on the public site.
Acct Type	Account type. Valid values are: CPM (C), RBH-BD (F), and RBH-MM (M).
Prod Grp	Product group. Numeric ID and description representing a combination of Class Groups that have highly correlated underlying instruments. Validated against the RBH profit/loss files.
Class Grp	Class group. Alphanumeric ID and description representing a combination of instruments that derive their value from the same underlying security or index. Validated against the RBH profit/loss files.

Item	Description
Underlying	Underlying symbol of an option, future, or warrant. Same as Symbol for all stock records. Validated against the RBH profit/loss files.
Type	Instrument type. Valid values are: Future (F), Option on Future (I), Option (O), Stock (S), and Warrant (W).
Symbol	Trading symbol for the option, stock, future, or warrant. Retrieved and validated against the RBH profit/loss files. **Note**: OCC enhanced PMC file processing beginning December 6, 2013. Warrants appear as options in files with a P&L File Date prior December 6, 2013, so filtering for instrument type **Warrant** in the Available Contracts filter will not return results.
Ser/Ctr Date	Original expiration date for option or original contract maturity for future. Validated against the RBH profit/loss files. (Not applicable to stock.)
Exp Date	Expiration date.
C/P	Call or put indicator. Valid values are: Call, Put, or Both. (Not applicable for future and stock records.).
Strike	Valid strike dollar amount. (Valid for options only.)
OK	Populate the list view with the refreshed data based on the filter criteria.
Reset	Reset all of the fields on the filter to the default values (except the P&L file date).

Selected Positions Filter

The **Selected Positions** filter returns a list of selected positions matching the search criteria that you enter.

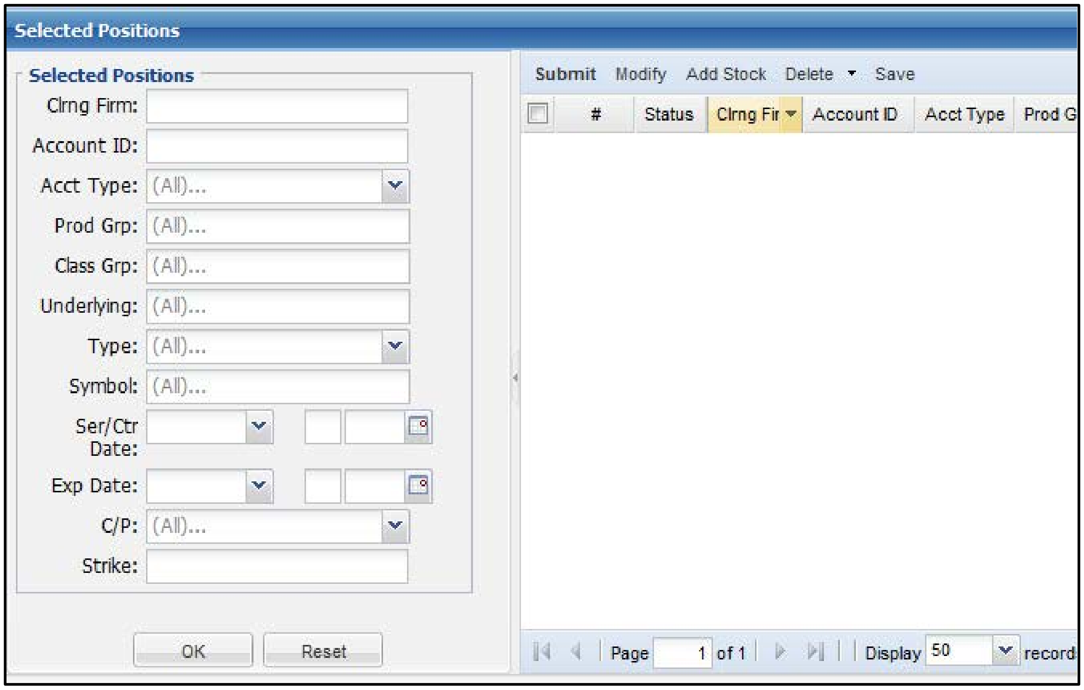


Figure 15: Selected Positions Filter Screen

Item	Description
Clrng Firm	Clearing firm number.
Acct ID	Account number or name.
Acct Type	Account type. Valid values are: CPM (C), RBH-BD (F), and RBH-MM (M).
Prod Grp	Product group. Numeric ID and description representing a combination of Class Groups that have highly correlated underlying instruments.
Class Grp	Class group. Alphanumeric ID and description representing a combination of instruments that derive their value from the same underlying security or index.
Underlying	Underlying symbol of an option, future, or warrant. Same as Symbol for all stock records.
Type	Instrument type. Valid values are: Future (F), Option on Future (I), Option (O), Stock (S), and Warrant (W).

Item	Description
Symbol	Trading symbol for the option, stock, future, or warrant. **Note**: OCC enhanced PMC file processing beginning December 6, 2013. Warrants appear as options in files with a P&L File Date prior December 6, 2013, so filtering for instrument type **Warrant** in the Selected Positions filter will not return results.
Ser/Cntr Date	Original expiration date for option or original contract maturity for future.
Exp Date	Expiration date.
C/P	Call or put indicator. Valid values are: Call, Put, or Both. (Not applicable for future and stock records.)
Strike	Valid strike dollar amount for the generated results set. (Valid for options only.)
OK	Populate the list view with the refreshed data based on the filter criteria.
Reset	Reset all of the fields on the filter to the default values.

Results Filter

The **Results** filter returns a list of results matching the search criteria that you enter.

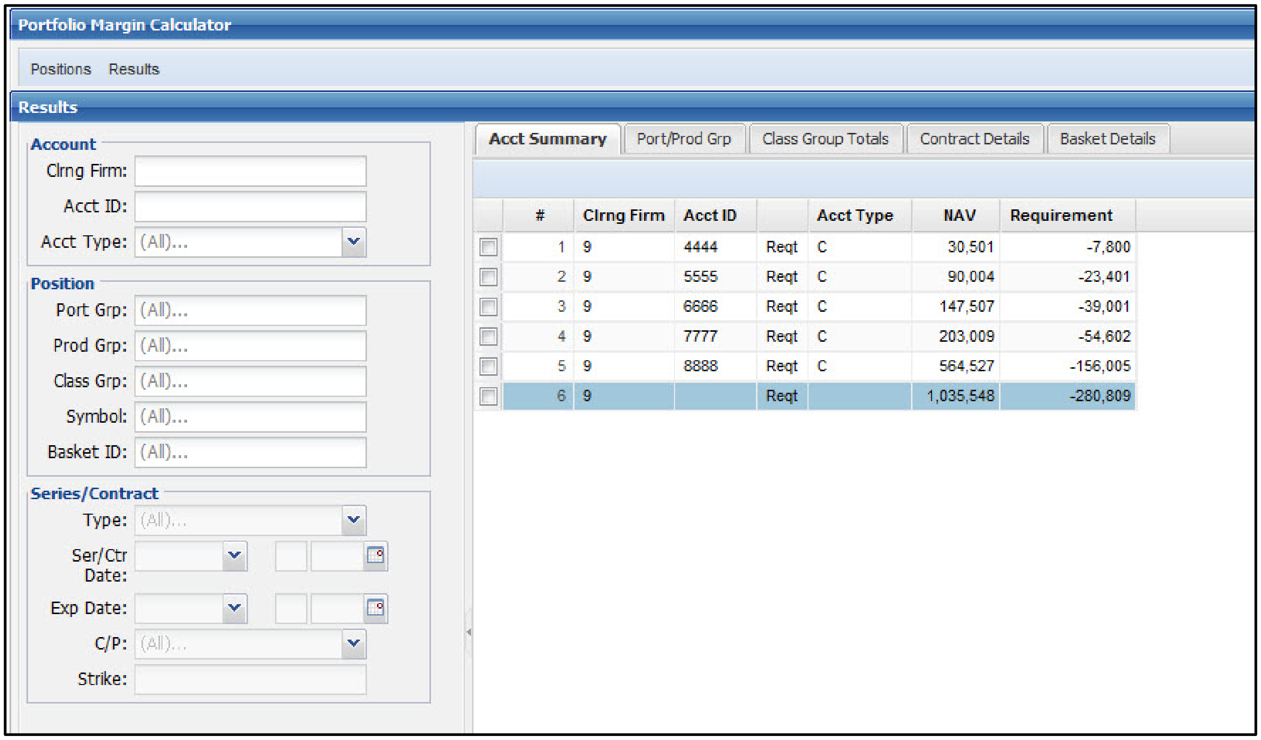


Figure 16: Results Filter Screen

Item	**Description**
Clrng Firm	Clearing firm number.
Acct ID	Account number and name.
Acct Type	Account type. Valid values are: CPM (C), RBH-BD (F), and RBH-MM (M).
Port Grp	Portfolio group ID for the generated results set.
Prod Grp	ID and description of product groups for the generated results set.
Class Grp	ID and description of class groups for the generated results set.
Symbol	Option, stock, future, or warrant trading symbol for the generated results set.
Basket ID	Basket ID for a class group for the generated results set.

Item	Description
Type	Instrument type for the generated results set. Valid values are: Future (F), Option on Future (I), Option (O), Stock (S), and Warrant (W). **Note**: OCC enhanced PMC file processing beginning December 6, 2013. Warrants appear as options in files with a P&L File Date prior December 6, 2013, so filtering for instrument type **W** in the Results filter will not return results.
Ser/Ctr Date	Original expiration date for option or original contract maturity for future.
Exp Date	Expiration date for the generated results set.
C/P	Call or put indicator for the generated results set. Valid values are Call, Put, or Both.
Strike	Strike dollar amount for the generated results set.
OK	Search for data within the displayed tab that matches the filter criteria.
Reset	Resets all fields in the filter to the default value.

Appendix B: Position File Description

This appendix describes the various components and layout of a CSV formatted position file, which can be used to upload multiple positions into the Portfolio Margin Calculator in order to calculate portfolio-based margin requirements. The position file can also be used in conjunction with manually edited positions.

1 – Position Header Record

This is the first row in the CSV position file. It consists of four fields.

Name of Field	**Character Description**	**Description**
Trans ID	Numeric, Right 3	This field will always be ‘346’.
Record Type	Alphanumeric, Left 1	‘H’ for header record.
Clearing Member Number	Numeric, Right 4	Clearing Member Number.
Date	Alphanumeric, Left 8	This field represents the date the file was produced and is in CCYYMMDD format.

2 – Detail Record

These rows contain position details. Each row consists of eighteen fields.

Name of Field	**Character Description**	**Description**
Trans ID	Numeric, Right 3	This field will always be ‘346’.
Record Type	Alphanumeric, Left 1	‘’ for detail record.
Clearing Member Number	Numeric, Right 4	Carrying Broker/Dealer identifier.
Account ID	Alphanumeric, Left 10	The identifier which has been assigned to an account to uniquely identify it.
Put/Call Indicator	Alphanumeric, Left 1	A put or call indicator (P-Put, C-Call) will be included for all option and warrant products. For future and ETF/stock positions this field will be blank.

Name of Field	Character Description	Description
Symbol	Alphanumeric, Left 6	Option (do not include OPRA code), warrant, ETF/stock or futures trading symbol. Included for all products.
FMS Exchange	Alphanumeric, Left 4	FMS (Foreign Marginable Securities) exchange MIC code is required for FMS stocks and options.
Exercise Style	Alphanumeric, Left 1	An exercise style indicator (A-American, E-European) will be required for OTC (Over-the-Counter) option contracts. For future and ETF/stock positions this field will always be blank.
Settlement Style	Alphanumeric, Left 1	A settlement style indicator (C-Settle On Close, O-Settle On Open) will be required for OTC (Over-the-Counter) option contracts. For future and ETF/stock positions this field will always be blank.
Series/Contract Date	Numeric, Left 8	The date on which the option or future expires. Format is CCYYMMDD. Required for all option, warrant, and future positions. For ETF/stock positions this field will be blank.
Expiration Date	Numeric, Left 8	Required only for OTC (Over-the-Counter) option contracts. Format is CCYYMMDD.
Strike Price	Numeric, Right 9(5.4)	The option strike dollar amount required for options and warrants. This field will be zero for future and ETF/stock security types.

Name of Field	Character Description	Description
Function	Alphanumeric, Left 1	This field represents whether a position is long or short. The valid codes are 'L' for long and 'S' for short.
Security Type Code	Alphanumeric, Left 1	This field represents the position's security type. The valid codes are: 'O' for Option 'I' for Option on Future 'W' for Warrant 'F' for Future 'S' for ETF/stock
Market Value	Numeric, Right 12(6.6)	The per share closing price for stocks/ETFs. This field is optional as the price will be read from the P/L file, but required for stocks whose data is not included in the P&L file.
Net Position	Numeric, Right 9	The net position quantity.
Interval Distinction ID	Alphanumeric, Left 1	Set to 'C' for customer, 'F' for broker/dealer, and 'M' for non-clearing specialist/market maker positions.
Basket ID*	Alphanumeric, Left 5	This field is used to identify stock positions which comprise a hedging basket.

3 – Position Trailer Record

This is the last row in the CSV position file. It contains five fields.

Name of Field	Character Description	Description
Trans ID	Numeric, Right 3	This field will always be '346'.
Record Type	Alphanumeric, Left 1	'T' for trailer record.

Name of Field	Character Description	Description
Clearing Member Number	Numeric, Right 4	Clearing Member Number.
Total Longs	Numeric, Right 11	Total of long net position values found on every detail record.
Total Shorts	Numeric, Right 11	Total of short net position values found on every detail record.

Character Description Legend

Alphanumeric – The field can be a combination of letters and numbers.

Numeric – The field must be a number.

Right – The field is justified to the right.

Left – The field is justified to the left.

Numeric entries in the Character Description sections of this Appendix convey the total number of digits in each respective field. They are described as Nx(y.z) where x is the total number of digits in the field; y is the number of integer digits; and z is the number of decimal digits. For example, "18(11.7) represents an eighteen digit number with eleven integers and seven decimals.

*Refers to Valid Basket Codes, which are available at https://www.theocc.com/Risk-Management/RBH-and-CPM-Documentation

Appendix C: Revision History

Revision History

Version	Date	Author	Version Updates
2.3	1/11/2016	OCC	• Text edits and new graphic on page 17 regarding Detail To export. • New text new graphics on page 18 regarding new Summary To export, and Positions and Results buttons.
2.4	8/10/2017	OCC	• Revised instructions for accessing the PMC module. • Updated public site URL to www.theocc.com.
2.5	7/27/2018	OCC	• Updated OCC logo, styles and footers. • No content changes.
2.6	9/3/2019	OCC	• Revised Position File Description Detail Record layout information for strike prices to contain a maximum of six integers. • Updated Figure 1 and Figure 2 screen captures to reflect the current www.theocc.com site.
2.7	10/16/2019	OCC	Updated Position File Description Detail Record layout information for strike prices to indicate that six-digit price integer expansion is being considered as a future enhancement.
2.8	11/18/2019	OCC	Updated Position File Description Detail Record layout to remove references to an enhancement which was being considered which would have expanded strike price integers to six digits.
2.9	06/29/2019	OCC	Updated the procedure for accessing the PMC application and the navigation to the Valid RBH and CPM Basket Code file.