UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

QUARTERLY REPORT UNDER SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For Quarter Ended June 30, 2016

Commission File Number 1-1687

PPG INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Pennsylvania	**25-0730780**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
One PPG Place, Pittsburgh, Pennsylvania	**15272**
(Address of principal executive offices)	**(Zip Code)**

(412) 434-3131
(Registrant's telephone number, including area code)

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	Smaller reporting company	☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2016 , 266,282,301 shares of the Registrant's common stock, par value $1.66-2/3 per share, were outstanding.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Statement of Income (Unaudited)
($ in millions, except per share amounts)

	Three Months Ended June 30		Six Months Ended June 30	
	2016	2015	2016	2015
Net sales	$ 4,064	$ 4,100	$ 7,736	$ 7,762
Cost of sales, exclusive of depreciation and amortization	2,190	2,283	4,203	4,348
Selling, general and administrative	956	954	1,875	1,867
Depreciation	91	92	182	179
Amortization	30	33	60	66
Research and development, net	119	123	237	242
Interest expense	31	34	62	63
Interest income	(7)	(10)	(14)	(21)
Business restructuring	—	140	—	140
Asbestos settlement, net	2	3	5	6
Other charges	32	34	53	59
Other income	(53)	(38)	(71)	(69)
Income from continuing operations before income taxes	673	452	1,144	882
Income tax expense	297	110	414	214
Income from continuing operations	376	342	730	668
Income from discontinued operations, net of tax	—	—	—	1
Net income attributable to the controlling and noncontrolling interests	376	342	730	669
Less: Net income attributable to noncontrolling interests	(6)	(5)	(13)	(10)
Net income (attributable to PPG)	$ 370	$ 337	$ 717	$ 659
Amounts attributable to PPG:				
Income from continuing operations, net of tax	$ 370	$ 337	$ 717	$ 658
Income from discontinued operations, net of tax	—	—	—	1
Net income (attributable to PPG)	$ 370	$ 337	$ 717	$ 659
Earnings per common share:				
Income from continuing operations, net of tax	$ 1.38	$ 1.24	$ 2.68	$ 2.41
Income from discontinued operations, net of tax	—	—	—	0.01
Net income (attributable to PPG)	$ 1.38	$ 1.24	$ 2.68	$ 2.42
Earnings per common share – assuming dilution:				
Income from continuing operations, net of tax	$ 1.37	$ 1.23	$ 2.66	$ 2.39
Income from discontinued operations, net of tax	—	—	—	0.01
Net income (attributable to PPG)	$ 1.37	$ 1.23	$ 2.66	$ 2.40
Dividends per common share	$ 0.40	$ 0.36	$ 0.76	$ 0.69

The accompanying notes to the condensed consolidated financial statements are an integral part of this condensed consolidated statement.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Statement of Comprehensive Income (Unaudited)
($ in millions)

	Three Months Ended June 30		Six Months Ended June 30	
	2016	2015	2016	2015
Net income attributable to the controlling and noncontrolling interests	$ 376	$ 342	$ 730	$ 669
Other comprehensive income (loss), net of tax:				
Defined benefit pension and other postretirement benefits, net	24	6	43	74
Unrealized foreign currency translation adjustments	(135)	(27)	(84)	(299)
Derivative financial instruments, net	—	(2)	(8)	4
Other comprehensive loss, net of tax	(111)	(23)	(49)	(221)
Total comprehensive income	$ 265	$ 319	$ 681	$ 448
Less: amounts attributable to noncontrolling interests:				
Net income	(6)	(5)	(13)	(10)
Unrealized foreign currency translation adjustments	5	—	2	5
Comprehensive income attributable to PPG	$ 264	$ 314	$ 670	$ 443

The accompanying notes to the condensed consolidated financial statements are an integral part of this condensed consolidated statement.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Balance Sheet (Unaudited)
($ in millions)

	June 30, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$ 1,605	$ 1,311
Short-term investments	64	144
Receivables (less allowance for doubtful accounts of $51 in each period)	3,108	2,788
Inventories	1,803	1,705
Assets held for sale	148	—
Other	379	606
Total current assets	7,107	6,554
Property, plant and equipment (net of accumulated depreciation of $4,354 and $4,434)	2,950	3,017
Goodwill	3,602	3,669
Identifiable intangible assets, net	2,073	2,178
Deferred income taxes	540	672
Investments	322	367
Other assets	654	619
Total	$ 17,248	$ 17,076
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable and accrued liabilities	$ 3,577	$ 3,490
Asbestos settlement	—	796
Restructuring reserves	55	87
Short-term debt and current portion of long-term debt	686	283
Liabilities held for sale	57	—
Total current liabilities	4,375	4,656
Long-term debt	4,426	4,042
Accrued pensions	615	712
Other postretirement benefits	1,016	1,021
Asbestos settlement	—	252
Deferred income taxes	546	460
Other liabilities	837	864
Total liabilities	11,815	12,007
Commitments and contingent liabilities (Note 15)		
Shareholders' equity:		
Common stock	969	969
Additional paid-in capital	668	635
Retained earnings	16,034	15,521
Treasury stock, at cost	(9,576)	(9,440)
Accumulated other comprehensive loss	(2,749)	(2,702)
Total PPG shareholders' equity	5,346	4,983
Noncontrolling interests	87	86
Total shareholders' equity	5,433	5,069
Total	$ 17,248	$ 17,076

The accompanying notes to the condensed consolidated financial statements are an integral part of this condensed consolidated statement.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Statement of Cash Flows (Unaudited)
($ in millions)

	Six Months Ended June 30	
	2016	**2015**
Operating activities:		
Net income attributable to controlling and noncontrolling interests	$ 730	$ 669
Less: Income from discontinued operations	—	(1)
Income from continuing operations	730	668
Adjustments to reconcile net income to cash from operations:		
Depreciation and amortization	242	245
Pension expense	37	49
Stock-based compensation expense	27	40
Business restructuring	—	140
Gain on sale of equity affiliate	(20)	—
Equity affiliate earnings, net of distributions received	(6)	(13)
Deferred income tax (benefit) expense	201	(46)
Cash contributions to pension plans	(13)	(283)
Restructuring cash spend	(30)	(22)
Cash paid for asbestos settlement funding	(813)	—
Change in certain asset and liability accounts:		
Receivables	(368)	(591)
Inventories	(104)	(80)
Other current assets	(26)	(84)
Accounts payable and accrued liabilities	139	20
Taxes and interest payable	(71)	136
Noncurrent assets and liabilities, net	4	27
Other	46	(20)
Cash (used for) / from operating activities	(25)	186
Investing activities:		
Capital expenditures	(168)	(162)
Business acquisitions, net of cash balances acquired	(10)	(26)
Proceeds from the disposition of PPG's interest in the Transitions Optical joint venture and sunlens business	—	47
Proceeds from sale of equity affiliate	41	—
Purchase of short-term investments	—	(97)
Proceeds from maturity of short-term investments	92	107
Payments for the settlement of cross currency swap contracts	(36)	(34)
Proceeds from cross currency swap and foreign currency contracts	19	38
Other	9	19
Cash used for investing activities	(53)	(108)
Financing activities:		
Net change in borrowing with maturities of three months or less	1	(12)
Net proceeds (payments) on commercial paper and short-term debt	988	(432)
Proceeds from the issuance of debt	3	1,242
Repayment of long-term debt	(252)	(338)
Purchase of treasury stock	(150)	(351)
Issuance of treasury stock	23	50
Dividends paid	(203)	(189)
Other	(21)	(12)
Cash from / (used for) financing activities	389	(42)
Effect of currency exchange rate changes on cash and cash equivalents	(17)	(15)
Net increase in cash and cash equivalents	294	21

Cash and cash equivalents, beginning of period	1,311	686
Cash and cash equivalents, end of period	$ 1,605	$ 707
Supplemental disclosures of cash flow information:		
Interest paid, net of amount capitalized	$ 63	$ 60
Taxes paid, net of refunds	$ 185	$ 158

The accompanying notes to the condensed consolidated financial statements are an integral part of this condensed consolidated statement.

Notes to Condensed Consolidated Financial Statements (Unaudited)

1 . Basis of Presentation

The condensed consolidated financial statements included herein are unaudited and have been prepared following the requirements of the Securities and Exchange Commission and accounting principles generally accepted in the United States of America ("U.S. GAAP") for interim reporting. Under these rules, certain footnotes and other financial information that are normally required for annual financial statements can be condensed or omitted. These statements include all adjustments, consisting only of normal, recurring adjustments, necessary for a fair presentation of the financial position of PPG Industries, Inc. and its subsidiaries (the "Company" or "PPG") as of June 30, 2016 , and the results of their operations for the three and six months ended June 30, 2016 and 2015 and their cash flows for the six months then ended. All intercompany balances and transactions have been eliminated. Material subsequent events are evaluated through the report issuance date and disclosed where applicable. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in PPG's Annual Report on Form 10-K for the year ended December 31, 2015 .

Revenues, expenses, assets and liabilities can vary during each quarter of the year. Accordingly, the results of operations for the three and six months ended June 30, 2016 and the trends in these unaudited condensed consolidated financial statements may not necessarily be indicative of the results to be expected for the full year.

2 . New Accounting Standards

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-13, "Financial Instruments - Credit Losses." This ASU requires an organization to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. Financial institutions and other organizations will now use forward-looking information to better inform their credit loss estimates. The amendments in this ASU are effective for fiscal years beginning after December 15, 2019, and for interim periods therein. PPG is in the process of assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

In April 2016, the FASB issued ASU No. 2016-10, "Identifying Performance Obligations and Licensing." This ASU addresses certain implementation issues that have surfaced since the issuance of ASU No. 2014-09 in May 2014. The ASU provides guidance in identifying performance obligations and determining the appropriate accounting for licensing arrangements. The amendments in this ASU are effective for fiscal years beginning after December 15, 2017, and for interim periods therein. PPG is in the process of assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

In March 2016, the FASB issued ASU No. 2016-09, "Improvements to Employee Share-Based Payment Accounting." This ASU simplifies certain aspects of the accounting for share-based payment transactions, including income tax requirements, forfeitures, and presentation on the balance sheet and the statement of cash flows. The amendments in this ASU are effective for annual periods beginning after December 15, 2016 and for the interim periods therein. PPG is in the process of assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

In March 2016, the FASB issued ASU No. 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)." This ASU clarifies the revenue recognition implementation guidance for preparers on certain aspects of principal versus agent consideration. The amendments in this ASU are effective for annual periods beginning after December 15, 2017 and for interim periods therein. PPG is in the process of assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

In February 2016, the FASB issued ASU No. 2016-02, "Leases." This ASU requires all lessees to recognize on the balance sheet right to use assets and lease liabilities for the rights and obligations created by lease arrangements with terms greater than 12 months. The amendments in this ASU are effective for fiscal years beginning after December 15, 2018 and for interim periods therein. PPG is in the process of assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers: Topic 606." This ASU replaces nearly all existing U.S. GAAP guidance on revenue recognition. The standard prescribes a five-step model for recognizing revenue, the application of which will require significant judgment. The amendments in this ASU are effective for fiscal years beginning after December 15, 2017, and for interim periods therein. PPG is in the process of

assessing the impact the adoption of this ASU will have on its consolidated financial position, results of operations and cash flows.

3 . Acquisitions and Dispositions

Acquisitions

On July 1, 2016, PPG completed the acquisition of MetoKote Corporation ("MetoKote"). MetoKote is a U.S.-based coatings services business with 2015 global sales of approximately $200 million . MetoKote applies coatings to customers' manufactured parts and assembled products. It operates on-site coatings services within several customer manufacturing locations, as well as at regional service centers, located throughout the U.S., Canada, Mexico, the United Kingdom, Germany, Hungary and the Czech Republic. Customers ship parts to MetoKote service centers where they are treated to enhance paint adhesion and painted with electrocoat, powder or liquid coatings technologies. Coated parts are then shipped to the customer’s next stage of assembly. MetoKote coats an average of more than 1.5 million parts per day.

In conjunction with the 2013 separation of its commodity chemicals business, PPG conveyed to Axiall Corporation ("Axiall") its 60% ownership interest in Taiwan Chlorine Industries (“TCI”), a joint venture with China Petrochemical Development Corporation (“CPDC”) located in Taiwan. Under PPG’s agreement with CPDC, if certain post-closing conditions were not met following the 3 year anniversary of the separation, CPDC had the option to sell its 40% ownership interest in TCI to Axiall for $100 million . In turn, Axiall had a right to designate PPG as its designee to purchase the 40% ownership interest of CPDC. On April 22, 2016, Axiall announced that CPDC had decided to sell its ownership interest in TCI to Axiall. On June 19, 2016, Axiall formally designated PPG to purchase the 40% ownership interest in TCI. PPG is evaluating its options regarding CPDC’s exercise of the put and Axiall’s subsequent designation of PPG to purchase the 40% ownership interest.

Dispositions

Flat Glass Business

On July 20, 2016, PPG signed a definitive agreement to sell the assets of its flat glass manufacturing and glass coatings operations to Vitro S.A.B. de C.V., a leading producer of flat glass and specialty products. The transaction is expected to close by the end of 2016, subject to customary closing conditions. PPG will receive approximately $750 million in gross cash proceeds. PPG will report the assets and liabilities of the flat glass business as "Assets held for sale" and "Liabilities held for sale" on the condensed consolidated balance sheet and the results of operations of the flat glass business as discontinued operations on the condensed consolidated statements of income and cash flows beginning in the third quarter 2016.

Under the terms of the agreement, PPG will divest its entire flat glass manufacturing and glass coatings operations, including production sites located in Fresno, California; Salem, Oregon; Carlisle, Pennsylvania; and Wichita Falls, Texas; four distribution/fabrication facilities located across Canada; and a research-and-development center located in Harmar, Pennsylvania, near Pittsburgh. PPG’s flat glass business includes approximately 1,200 employees. The business manufactures glass that is fabricated into products used primarily in commercial and residential construction.

European Fiber Glass Business

On June 20, 2016, PPG announced that it has signed an agreement for the sale of its European fiber glass operations to glass manufacturer Nippon Electric Glass Co. Ltd. ("NEG"). The transaction is subject to completion of employee consultation processes, receipt of regulatory clearances and other customary closing conditions. PPG and NEG expect to close the transaction in the second half of 2016. This transaction meets the criteria to be classified as assets held for sale and accordingly all assets and liabilities of the European fiber glass business have been reclassified to "Assets held for sale" and "Liabilities held for sale" as of June 30, 2016 on the condensed consolidated balance sheet.

The major classes of assets and liabilities of the European fiber glass operation included in the PPG condensed, consolidated balance sheet at June 30, 2016 were as follows:

($ in millions)	June 30, 2016
Receivables	$ 28
Inventory	20
Other current assets	1
Property, plant, and equipment	55
Goodwill	43
Other non-current assets	1
Assets held for sale	$ 148
Accounts payable and accrued liabilities	(34)
Accrued pensions	(20)
Other long-term liabilities	(3)
Liabilities held for sale	$ (57)

Pittsburgh Glass Works LLC

On April 21, 2016, PPG sold its minority ownership interest in Pittsburgh Glass Works LLC ("PGW") to LKQ Corporation concurrent with the majority partner's sale of its ownership interest. At March 31, 2016, the carrying value of PPG's investment in PGW was $21 million . In conjunction with the sale, PPG received $41 million in cash proceeds and recorded a pre-tax gain of $20 million in the second quarter 2016. PPG accounted for its interest in PGW under the equity method of accounting. PPG's share of net earnings from PGW are reported in Other income in the Condensed, Consolidated Statement of Income for all periods presented and have not been reclassified as discontinued operations, as the divestiture of PGW does not represent a strategic shift in PPG's operations and PGW did not have a major impact on PPG's ongoing results of operations.

4 . Inventories

($ in millions)	June 30, 2016	December 31, 2015
Finished products	$ 1,148	$ 1,082
Work in process	179	160
Raw materials	430	413
Supplies	46	50
Total Inventories	$ 1,803	$ 1,705

Most U.S. inventories are valued using the last-in, first-out method. These inventories represented approximately 38% and 39% of total inventories at June 30, 2016 and December 31, 2015 , respectively. If the first-in, first-out method of inventory valuation had been used, inventories would have been $140 million and $163 million higher as of June 30, 2016 and December 31, 2015 , respectively.

5 . Goodwill and Other Identifiable Intangible Assets

The change in the carrying amount of goodwill attributable to each reportable segment for the six months ended June 30, 2016 was as follows:

($ in millions)	Performance Coatings	Industrial Coatings	Glass	Total
Balance, December 31, 2015	$ 3,073	$ 552	$ 44	$ 3,669
Acquisitions	(2)	—	—	(2)
Reclassifications to Assets held for sale	—	—	(43)	(43)
Currency	(30)	9	(1)	(22)
Balance, June 30, 2016	$ 3,041	$ 561	$ —	$ 3,602

The carrying amount of acquired trademarks with indefinite lives totaled $1.2 billion and $1.3 billion as of June 30, 2016 and December 31, 2015 , respectively.

The Company's identifiable intangible assets with finite lives are being amortized over their estimated useful lives and are detailed below:

($ in millions)	June 30, 2016			December 31, 2015		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Acquired technology	$ 572	$ (436)	$ 136	$ 572	$ (421)	$ 151
Customer-related intangibles	1,272	(617)	655	1,267	(574)	693
Trade names	135	(70)	65	132	(61)	71
Other	39	(28)	11	39	(26)	13
Balance	$ 2,018	$ (1,151)	$ 867	$ 2,010	$ (1,082)	$ 928

Aggregate amortization expense related to these identifiable intangible assets for the three and six months ended June 30, 2016 was $30 million and $60 million , respectively, and for the three and six months ended June 30, 2015 was $33 million and $66 million , respectively.

As of June 30, 2016 , estimated future amortization expense of identifiable intangible assets is as follows:

($ in millions)	Future Amortization Expense
Remaining six months of 2016	$ 65
2017	125
2018	120
2019	110
2020	95
2021	95
Thereafter	257

6 . Business Restructuring

The Company records restructuring liabilities that represent charges incurred in connection with consolidations of certain operations, including operations from acquisitions, as well as headcount reduction programs. These charges consist primarily of severance costs and asset write-downs.

In April 2015, the Company approved a business restructuring plan which includes actions necessary to achieve cost synergies related to recent acquisitions. In addition, the program aims to further align employee levels and production capacity in certain businesses and regions with current product demand, as well as reductions in various global administrative functions. A pre-tax restructuring charge of $140 million was recorded in PPG's second quarter 2015 financial results, of which about 85% represents employee severance and other cash costs. The restructuring actions are expected to be substantially completed during 2016.

The 2015 restructuring charge and the reserve activity for 2015 and the six months ended June 30, 2016 was as follows:

($ in millions, except for employees impacted)	Severance and Other Costs	Asset Write-offs	Total Reserve	Employees Impacted
Performance Coatings	$ 71	$ 6	$ 77	1,259
Industrial Coatings	42	13	55	534
Glass	4	—	4	33
Corporate	4	—	4	27
Total second quarter 2015 restructuring charge	$ 121	$ 19	$ 140	1,853
2015 Activity	(32)	(19)	(51)	(1,047)
Foreign currency impact	(2)	—	(2)	—
Balance as of December 31, 2015	$ 87	$ —	$ 87	806
2016 Activity	(31)	—	(31)	(456)
Foreign currency impact	(1)	—	(1)	—
Balance as of June 30, 2016	$ 55	$ —	$ 55	350

7 . Borrowings

In May 2016, PPG entered into two $250 million Term Loan Credit Agreements. One term loan agreement is with the Bank of Tokyo-Mitsubishi UFJ, Ltd. (the “BTM Term Loan”) under which the Company has borrowed $250 million . The second term loan credit agreement is with BNP Paribas (the “BNP Term Loan”) under which the Company has borrowed $250 million . The BTM Term Loan terminates and all amounts outstanding are payable on March 30, 2017. The BNP Term Loan terminates and all amounts outstanding are payable on May 26, 2017.

In January 2016, PPG’s $250 million 1.9% notes matured, and PPG repaid these notes with cash on hand.

In June 2015, PPG's €300 million Euro-denominated notes matured, and PPG repaid these notes with cash on hand ($336 million).

In March 2015, PPG completed a public offering of €600 million 0.875% Notes due 2022 and €600 million 1.400% Notes due 2027 (together, the “Notes”), or €1.2 billion ($1.26 billion) in aggregate principal amount. The aggregate cash proceeds from the Notes, net of discounts and fees, was $1.24 billion . The Notes are denominated in Euro and have been designated as hedges of net investments in the Company’s European operations.

8 . Earnings Per Share

The effect of dilutive securities on the weighted average common shares outstanding included in the calculation of earnings per diluted common share for the three and six months ended June 30, 2016 and 2015 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
(number of shares in millions)	2016	2015	2016	2015
Weighted average common shares outstanding	267.2	272.5	267.4	272.8
Effect of dilutive securities:				
Stock options	0.9	1.1	0.9	1.1
Other stock compensation plans	1.0	1.1	0.9	1.2
Potentially dilutive common shares	1.9	2.2	1.8	2.3
Adjusted weighted average common shares outstanding	269.1	274.7	269.2	275.1

Excluded from the computation of earnings per diluted share due to their antidilutive effect were 0.6 million outstanding stock options for the three and six months ended June 30, 2016 . There were no antidilutive outstanding stock options for the three and six months ended June 30, 2015 .

9 . Income Taxes

	Six Months Ended June 30	
	2016	2015
Effective tax rate on pre-tax income from continuing operations	36.2%	24.3%

In June 2016, the Company recorded a $128 million net tax charge associated with the funding of the asbestos settlement trust ("Trust") described in Note 15, " Commitments and Contingent Liabilities ." The Company provided taxes on certain of its foreign subsidiaries earnings to fund the Trust using cash from various jurisdictions. Also in conjunction with the funding of the Trust, PPG recorded certain one-time book tax benefits associated with the contribution of PPG's interest in Pittsburgh Corning's European subsidiary to the Trust and a change in measurement of certain deferred tax liabilities.

The effective tax rate for 2015 is lower than the U.S. federal statutory rate primarily due to earnings in foreign jurisdictions which are taxed at rates lower than the U.S. statutory rate, the U.S. tax benefit on foreign dividends paid and the impact of certain U.S. tax incentives. The 2016 rate includes similar benefits; however, they are more than offset by the asbestos settlement net tax charge.

The Company files federal, state and local income tax returns in numerous domestic and foreign jurisdictions. In most tax jurisdictions, returns are subject to examination by the relevant tax authorities for a number of years after the returns have been filed. The Company is no longer subject to examinations by tax authorities in any major tax jurisdiction for years before 2006. In addition, the Internal Revenue Service (“IRS”) has completed its examination of the Company’s U.S. federal income tax returns filed for years through 2011. The IRS is currently conducting its examination of the Company's U.S. federal income tax return for 2012 and 2013.

10 . Pensions and Other Postretirement Benefits

Net periodic pension and other post-retirement benefit costs are included in "Cost of sales, exclusive of depreciation and amortization," "Selling, general and administrative" and "Research and development" in the accompanying condensed consolidated statement of income.

The net periodic pension and other post-retirement benefit costs for the three and six months ended June 30, 2016 and 2015 were as follows:

	Pensions			
	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Service cost	$ 13	$ 15	$ 27	$ 30
Interest cost	44	53	87	103
Expected return on plan assets	(69)	(69)	(138)	(139)
Amortization of actuarial losses	31	25	62	55
Amortization of prior service credit	(1)	—	(1)	(1)
Curtailments and special termination benefits	—	1	—	1
Net periodic benefit cost	$ 18	$ 25	$ 37	$ 49

	Other Postretirement Benefits			
	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Service cost	$ 3	$ 5	$ 7	$ 10
Interest cost	10	12	20	24
Amortization of actuarial losses	5	8	9	16
Amortization of prior service credit	(2)	(2)	(4)	(5)
Net periodic benefit cost	$ 16	$ 23	$ 32	$ 45

PPG expects its net periodic pension and other post-retirement benefit cost, excluding settlement losses, for 2016 will be approximately $140 million , with pension representing approximately $75 million and other post-retirement benefit cost representing approximately $65 million .

In 2016, PPG changed the method it uses to estimate the service and interest cost components of net periodic benefit cost for pension and other postretirement benefit costs for substantially all of its U.S. and foreign plans. Historically, the service and interest cost components were estimated using a single weighted-average discount rate derived from the yield curve used to measure the projected benefit obligation at the beginning of the period. PPG has elected to use a full yield curve approach (“Split-rate”) to estimate these components of benefit cost by applying specific spot rates along the yield curve used to determine the benefit obligation to the relevant projected cash flows. PPG made this change to improve the correlation between projected benefit cash flows and the corresponding yield curve spot rates and to provide a more precise measurement of service and interest costs. This change does not affect the measurement of the Company’s total benefit obligations. PPG accounted for this change as a change in estimate and, accordingly, is recognizing its effect prospectively beginning in fiscal year 2016.

Contributions to Defined Benefit Pension Plans

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
U.S. defined benefit pension voluntary contributions	$ —	$ —	$ —	$ 250
Non-U.S. defined benefit pension voluntary contributions	$ —	$ —	$ —	$ 21
Non-U.S. defined benefit pension mandatory contributions	$ 7	$ —	$ 13	$ 12

PPG is not required to make any mandatory contributions to its U.S. defined benefit pension plans in 2016 . PPG expects to make mandatory contributions to its non-U.S. pension plans in the range of $20 million to $25 million over

the remaining six months of 2016. As noted below, we expect to make voluntary contributions to our defined benefit pension plans in 2016 and beyond.

Retained Liabilities and Legacy Settlement Charges

PPG has retained certain liabilities for pension and post-retirement benefits earned for service up to the date of sale of its former automotive glass and service business for employees who were active as of the divestiture date and for individuals who were retirees of the business as of the divestiture date. There have been multiple PPG facilities closures in Canada related to the former automotive glass and services business as well as other PPG businesses. These various plant closures have resulted in partial and full windups, and related settlement charges, of pension plans for various hourly and salary employees employed by these locations. The charges are recorded for the individual plans when a particular windup is approved by the Canadian pension authorities and the Company has made all contributions to the individual plan. There were no charges recorded in the six months ended June 30, 2016 or 2015; however, additional windup charges of $45 million to $55 million are expected during the remaining six months of 2016 related to these plant closures. Cash contributions related to these future windups are expected to be in the range of $5 million to $10 million .

Pension Annuity Contracts

On June 24, 2016, the Company entered into (a) a Definitive Purchase Agreement by and among the Company, Massachusetts Mutual Life Insurance Company (“MassMutual”) and State Street Bank & Trust Company (“State Street”), as independent fiduciary to the Company’s United States defined benefit pension plans (the “Plans”), and (b) a Definitive Purchase Agreement by and among the Company, Metropolitan Life Insurance Company (“MetLife”) and State Street, pursuant to which the Plans will purchase group annuity contracts that will irrevocably transfer to the two insurance companies the future pension benefit obligations for approximately 13,200 of the Company’s retirees in the United States who started receiving their monthly retirement benefit payments on or before April 1, 2016.

Upon issuance of the group annuity contracts, the value of the benefit obligation of each affected former salaried employee’s retirement benefit obligation will be irrevocably guaranteed by, and split equally between, MassMutual and MetLife. Pursuant to these Definitive Purchase Agreements, MassMutual will serve as the lead administrator and, beginning September 1, 2016, it will make each former salaried employee’s full annuity payment on behalf of itself and MetLife. The value of the benefit obligation of each affected former hourly employee’s retirement benefit obligation will be irrevocably guaranteed by MetLife, and MetLife will serve as the administrator. Beginning September 1, 2016, MetLife will make each former hourly employee’s full annuity payment.

The amount of each affected retiree’s annuity payment will be equal to the amount of such individual’s pension benefit. By irrevocably transferring the obligations to MassMutual and MetLife, the Company will reduce its overall pension projected benefit obligation by approximately $1.6 billion . The purchase of group annuity contracts will be funded directly by the assets of the Plans.

The Definitive Purchase Agreements each contain closing conditions customary for a transaction of this nature, including certain termination clauses. Assuming all closing conditions are satisfied, the Company expects the purchase of the irrevocable group annuity contracts would occur in the third quarter of 2016.

The Company expects to make contributions aggregating approximately $175 million to the Plans in 2016 and 2017. These contributions will be funded by cash on hand. The Company expects to recognize a non-cash pension settlement charge of approximately $500 million to $600 million after-tax (approximately $800 million to $1.0 billion pre-tax) in the third quarter of 2016 resulting from the purchase of the group annuity contracts.

11 . Shareholders' Equity

Changes to shareholders' equity for the six months ended June 30, 2016 and 2015 were as follows:

($ in millions)	Total PPG Shareholders' Equity	Non-controlling Interests	Total
Balance, January 1, 2016	$ 4,983	$ 86	$ 5,069
Net income	717	13	730
Other comprehensive income, net of tax	(47)	(2)	(49)
Cash dividends	(203)	—	(203)
Issuance of treasury stock	46	—	46
Stock repurchase program	(150)	—	(150)
Other	—	(10)	(10)
Balance, June 30, 2016	$ 5,346	$ 87	$ 5,433

($ in millions)	Total PPG Shareholders' Equity	Non-controlling Interests	Total
Balance, January 1, 2015	$ 5,180	$ 85	$ 5,265
Net income	659	10	669
Other comprehensive income, net of tax	(216)	(5)	(221)
Cash dividends	(189)	—	(189)
Issuance of treasury stock	65	—	65
Stock repurchase program	(351)	—	(351)
Stock-based compensation activity	23	—	23
Other	—	(5)	(5)
Balance, June 30, 2015	$ 5,171	$ 85	$ 5,256

12 . Accumulated Other Comprehensive Loss

($ in millions)	Unrealized Foreign Currency Translation Adjustments	Pension and Other Postretirement Benefit Adjustments, net of tax	Unrealized Gain (Loss) on Derivatives, net of tax	Accumulated Other Comprehensive (Loss) Income
Balance, January 1, 2016	$ (1,332)	$ (1,379)	$ 9	$ (2,702)
Current year deferrals to AOCI	(85) [a]	—	—	(85)
Current year deferrals to AOCI, tax effected	3 [b]	17 [c]	2 [d]	22
Reclassifications from AOCI to net income	—	26 [c]	(10) [d]	16
Net change	$ (82)	$ 43	$ (8)	$ (47)
Balance, June 30, 2016	$ (1,414)	$ (1,336)	$ 1	$ (2,749)
Balance, January 1, 2015	$ (628)	$ (1,492)	$ 4	$ (2,116)
Current year deferrals to AOCI	(387) [a]	—	—	(387)
Current year deferrals to AOCI, tax effected	93 [b]	32 [c]	(23) [d]	102
Reclassifications from AOCI to net income	—	42 [c]	27 [d]	69
Net change	$ (294)	$ 74	$ 4	$ (216)
Balance, June 30, 2015	$ (922)	$ (1,418)	$ 8	$ (2,332)

(a) - Unrealized foreign currency translation adjustments related to the translation of foreign denominated balance sheet account balances are not presented net of tax given that no deferred U.S. income taxes have been provided on the undistributed earnings of non-U.S. subsidiaries because they are deemed to be reinvested for an indefinite period of time.

(b) - The tax (benefit) cost related to unrealized foreign currency translation adjustments on tax inter-branch transactions and net investment hedges for the six months ended June 30, 2016 and 2015 was $(46) million and $20 million , respectively. The balance also includes a remeasurement of the tax cost on certain foreign proceeds which have not been permanently reinvested.

(c) - The tax (benefit) cost related to the adjustment for pension and other postretirement benefits for the six months ended June 30, 2016 and 2015 was $(20) million and $31 million , respectively. Reclassifications from AOCI are included in the computation of net periodic pension and other post-retirement benefit costs (See Note 10, "Pensions and Other Postretirement Benefits").

(d) - The tax (benefit) cost related to the changes in the unrealized gain on derivatives for the six months ended June 30, 2016 and 2015 was $(3) million and $1 million , respectively. Reclassifications from AOCI are included in the gain recognized on cash flow hedges (See Note 13, "Financial Instruments, Hedging Activities and Fair Value Measurements").

13 . Financial Instruments, Hedging Activities and Fair Value Measurements

Financial instruments include cash and cash equivalents, short-term investments, cash held in escrow, marketable equity securities, accounts receivable, company-owned life insurance, accounts payable, short-term and long-term debt instruments, and derivatives. The fair values of these financial instruments approximated their carrying values at June 30, 2016 and December 31, 2015 , in the aggregate, except for long-term debt instruments.

Hedging Activities

The Company has exposure to market risk from changes in foreign currency exchange rates and interest rates. Prior to the settlement of the Asbestos Settlement Trust described in Note 15 " Commitments and Contingent Liabilities ," the Company had exposure to changes in PPG's stock price . As a result, financial instruments, including derivatives, may be used to hedge these underlying economic exposures. Certain of these instruments qualify as cash flow, fair value and net investment hedges upon meeting the requisite criteria, including effectiveness of offsetting hedged or underlying exposures. Changes in the fair value of derivatives that do not qualify for hedge accounting are recognized in income from continuing operations in the period incurred.

PPG’s policies do not permit speculative use of derivative financial instruments. PPG enters into derivative financial instruments with high credit quality counterparties and diversifies its positions among such counterparties in order to reduce its exposure to credit losses. The Company did not realize a credit loss on derivatives during the three and six month periods ended June 30, 2016 and 2015 .

All of PPG's outstanding derivative instruments are subject to accelerated settlement in the event of PPG’s failure to meet its debt or payment obligations under the terms of the instruments’ contractual provisions. In addition, should the Company be acquired and its payment obligations under the derivative instruments’ contractual arrangements not be assumed by the acquirer, or should PPG enter into bankruptcy, receivership or reorganization proceedings, the instruments would also be subject to accelerated settlement.

There were no derivative instruments de-designated or discontinued as hedging instruments during the three and six month periods ended June 30, 2016 and 2015 .

Fair Value Hedges

PPG designates certain foreign currency forward contracts as hedges against the Company's exposure to future changes in fair value of certain firm sales commitments denominated in foreign currencies. As of June 30, 2016 and 2015 , the fair value of these contracts were insignificant.

Prior to June 8, 2016, PPG entered into renewable equity forward arrangements to hedge the impact to PPG's income from continuing operations for changes in the fair value of 2,777,778 shares of PPG stock that were contributed to the asbestos settlement trust as discussed in Note 15, "Commitments and Contingent Liabilities." These financial instruments were recorded at fair value as assets or liabilities and changes in the fair value of these financial instruments are reflected in the "Asbestos settlement – net" caption of the accompanying condensed consolidated statement of income. The total principal amount paid for these shares was approximately $60 million . During the terms of these equity forward arrangements, PPG paid to the counterparty interest based on the principal amount and the counterparty paid to PPG an amount equal to the dividends paid on these shares which reduced the transaction price by approximately $10 million , net. The difference between the principal amount and any amounts related to unpaid interest or dividends and the market price for these shares, adjusted for credit risk, represented the fair value of these financial instruments as well as the amount that PPG received when the counterparty chose to net settle these financial instruments. In conjunction with the funding of the Asbestos Settlement Trust, the equity forward arrangements were settled. At settlement on June 9, 2016, the fair value of these arrangements was an asset of $258 million .

Interest rate swaps have been used from time to time to manage the Company's exposure to changing interest rates. When outstanding, the interest rate swaps were designated as fair value hedges of certain outstanding debt obligations of the Company and were recorded at fair value. There were no interest rate swaps outstanding as of June 30, 2016 and December 31, 2015 . However, in prior years, PPG settled interest rate swaps and received or paid cash. The fair value adjustment of the debt at the time the interest rate swaps were settled is still being amortized as a reduction to interest expense over the remaining term of the related debt which matures in 2021.

Cash Flow Hedges

PPG designates certain foreign currency forward contracts as cash flow hedges of the Company's exposure to variability in exchange rates on intercompany and third party transactions denominated in foreign currencies. As of June 30, 2016 and December 31, 2015 , the fair value of all foreign currency forward contracts designated as cash flow hedges was a net asset of $13 million and $44 million , respectively.

Net Investment Hedges

PPG uses cross currency swaps, foreign currency forward contracts and Euro-denominated debt to hedge a portion of its net investment in its European operations. As of June 30, 2016 , U.S. dollar to Euro cross currency swap contracts with a total notional amount of $560 million were outstanding and are scheduled to expire in March 2018. On settlement of the outstanding contracts, PPG will receive $560 million U.S. dollars and pay Euros to the counterparties. During the term of these contracts, PPG will receive semiannual payments in March and September of each year based on a U.S. dollar, long-term interest rate fixed as of the contract inception date, and PPG will make annual payments in March of each year to the counterparties based on a Euro, long-term interest rate fixed as of the contract inception date. As of June 30, 2016 and December 31, 2015 , the fair value of these contracts was a net asset of $53 million and $41 million , respectively.

As of June 30, 2016 and December 31, 2015 , PPG had designated €1.9 billion Euro-denominated borrowings as hedges of a portion of its net investment in the Company's European operations. The carrying value of these instruments as of June 30, 2016 and December 31, 2015 was $2.1 billion and $2.0 billion , respectively.

Gains/Losses Deferred in AOCI

As of June 30, 2016 and December 31, 2015 , the Company had accumulated pre-tax unrealized translation gains in AOCI related to the Euro-denominated borrowings, foreign currency forward contracts and the cross currency swaps of $300 million and $349 million , respectively.

The following tables summarize the location within the financial statements and amount of gains (losses) related to derivative financial instruments for the six months ended June 30, 2016 and 2015. All dollar amounts are shown on a pre-tax basis.

($ in millions)	June 30, 2016		
	Loss Deferred in OCI	Gain (Loss) Recognized	
Hedge Type		Amount	Caption
Fair Value			
Equity forward arrangements	Not applicable	35	Asbestos settlement - net
Total Fair Value		$ 35	
Cash Flow			
Foreign currency forward contracts [a]	$ (13)	$ (2)	Other charges
Total Cash Flow	$ (13)	$ (2)	
Net Investment			
Cross currency swaps	$ (6)		
Foreign denominated debt	(43)		
Total Net Investment	$ (49)		

(a) The ineffective portion related to this item was $2 million of income.

($ in millions)	June 30, 2015		
	Gain Deferred in OCI	Gain (Loss) Recognized	
Hedge Type		Amount	Caption
Fair Value			
Equity forward arrangements	Not applicable	(1)	Asbestos settlement - net
Total Fair Value		$ (1)	
Cash Flow			
Foreign currency forward contracts [a]	39	34	Other charges
Total Cash Flow	$ 39	$ 34	
Net Investment			
Cross currency swaps	$ 61		
Foreign currency forward contracts	19		
Foreign denominated debt	33		
Total Net Investment	$ 113		
Economic			
Foreign currency forward contracts		$ 18	Other charges

(a) The ineffective portion related to this item was $4 million of expense.

Fair Value Measurements

The Company follows a fair value measurement hierarchy to measure its assets and liabilities. As of June 30, 2016 and December 31, 2015 , the assets and liabilities measured at fair value on a recurring basis were cash equivalents, equity securities and derivatives. In addition, the Company measures its pension plan assets at fair value (see Item 8. Financial Statements and Supplementary Data - Note 12, "Employee Benefit Plans" in the Company's 2015 Annual Report on Form 10-K for further details). The Company's financial assets and liabilities are measured using inputs from the following three levels:

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets and liabilities that the Company has the ability to access at the measurement date. Level 1 inputs are considered to be the most reliable evidence of fair value as they are based on unadjusted quoted market prices from various financial information service providers and securities exchanges.

Level 2 inputs are directly or indirectly observable prices that are not quoted on active exchanges, which include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability and inputs that

are derived principally from or corroborated by observable market data by correlation or other means. The fair values of the derivative instruments reflect the instruments' contractual terms, including the period to maturity, and uses observable market-based inputs, including forward curves.

Level 3 inputs are unobservable inputs employed for measuring the fair value of assets or liabilities. The Company does not have any recurring financial assets or liabilities that are recorded in its consolidated balance sheets as of June 30, 2016 and December 31, 2015 that are classified as Level 3 inputs.

Assets and liabilities reported at fair value on a recurring basis:

	June 30, 2016		
($ in millions)	Level 1	Level 2	Level 3
Assets:			
Other current assets:			
Marketable equity securities	$ 4	$ —	$ —
Foreign currency forward contracts		24	—
Equity forward arrangement		—	—
Investments:			
Marketable equity securities	76	—	—
Other Assets:			
Cross currency swaps	—	53	—
Liabilities:			
Accounts payable and accrued liabilities:			
Foreign currency forward contracts	—	7	—

	December 31, 2015		
($ in millions)	Level 1	Level 2	Level 3
Assets:			
Other current assets:			
Marketable equity securities	$ 4	$ —	$ —
Foreign currency forward contracts	—	47	—
Equity forward arrangement	—	223	—
Investments:			
Marketable equity securities	77	—	—
Other assets:			
Cross currency swaps	—	41	—
Liabilities:			
Accounts payable and accrued liabilities:			
Foreign currency forward contracts	—	4	—

Long-Term Debt

($ in millions)	June 30, 2016 [a]	December 31, 2015 [b]
Long-term debt - carrying value	$ 4,400	$ 4,265
Long-term debt - fair value	$ 4,704	$ 4,367

(a) Excluding capital lease obligations of $29 million and short term borrowings of $682 million as of June 30, 2016 .

(b) Excluding capital lease obligations of $30 million and short term borrowings of $29 million as of December 31, 2015 .

The fair values of the debt instruments were based on discounted cash flows and interest rates then currently available to the Company for instruments of the same remaining maturities and were measured using level 2 inputs.

Assets and liabilities reported at fair value on a nonrecurring basis:

There were no significant adjustments to the fair value of nonmonetary assets or liabilities for the six months ended June 30, 2016 , or for the year ended December 31, 2015 .

14 . Stock-Based Compensation

The Company's stock-based compensation includes stock options, restricted stock units ("RSUs") and grants of contingent shares that are earned based on achieving targeted levels of total shareholder return. All current grants of stock options, RSUs and contingent shares are made under the PPG Industries, Inc. Amended and Restated Omnibus Incentive Plan (the "PPG Amended Omnibus Plan"), which was amended and restated effective April 21, 2016. Shares available for future grants under the PPG Amended Omnibus Plan were 9.8 million as of June 30, 2016 .

Stock-based compensation and the income tax benefit recognized during the three and six months ended June 30, 2016 and 2015 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Stock-based compensation	$ 17	$ 25	$ 27	$ 40
Income tax benefit recognized	$ 6	$ 9	$ 10	$ 14

Grants of stock-based compensation during the six months ended June 30, 2016 and 2015 were as follows:

	Six Months Ended June 30			
	2016		2015	
Grant Details	Shares	Fair Value	Shares	Fair Value
Stock options	775,319	$ 17.89	583,172	$ 26.98
Restricted stock units	254,750	$ 91.37	193,990	$ 114.02
Contingent shares (a)	59,645	$ 95.00	63,308	$ 118.12

(a) The number of contingent shares represents the target value of the award.

Stock options are generally exercisable 36 months after being granted and have a maximum term of 10 years. Compensation expense for stock options is recorded over the vesting period based on the fair value on the date of grant. The fair value of the stock option grants issued in the six months ended June 30, 2016 was calculated with the following weighted average assumptions:

Weighted average exercise price	$ 95.06
Risk-free interest rate	1.6%
Expected life of option in years	6.5
Expected dividend yield	2.1%
Expected volatility	22.8%

The risk-free interest rate is determined by using the U.S. Treasury yield curve at the date of the grant and using a maturity equal to the expected life of the option. The expected life of options is calculated using the average of the vesting term and the maximum term, as prescribed by accounting guidance on the use of the simplified method for determining the expected term of an employee share option. The expected dividend yield and volatility are based on historical stock prices and dividend amounts over past time periods equal in length to the expected life of the options.

Time-based RSUs generally vest over the three -year period following the date of grant, unless forfeited, and will be paid out in the form of stock, cash or a combination of both at the Company's discretion at the end of the vesting period. Performance-based RSUs vest based on achieving specific annual performance targets for earnings per share growth and cash flow return on capital over the three calendar year-end periods following the date of grant. Unless forfeited, the performance-based RSUs will be paid out in the form of stock, cash or a combination of both at the Company's discretion at the end of the three-year performance period if PPG meets the performance targets.

Contingent share grants (referred to as "TSR awards") are made annually and are paid out at the end of each three -year period following the date of grant based on PPG's performance. Performance is measured by determining the percentile rank of the total shareholder return of PPG common stock in relation to the total shareholder return of the S&P 500 as it existed at the beginning of the three-year performance period excluding any companies that have been removed from the index because they ceased to be publicly traded during the performance period. Any payments made at the end of the award period may be in the form of stock, cash or a combination of both. The TSR awards qualify as liability awards, and compensation expense is recognized over the three-year award period based on the

fair value of the awards (giving consideration to the Company's percentile rank of total shareholder return) remeasured in each reporting period until settlement of the awards.

15 . Commitments and Contingent Liabilities

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. These lawsuits and claims may relate to contract, patent, environmental, product liability, antitrust and other matters arising out of the conduct of PPG's current and past business activities. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage in the future. PPG's lawsuits and claims against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The results of any current or future litigation and claims are inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims, will not have a material effect on PPG's consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

Foreign Tax Matter

In June 2014, PPG received a notice from a Foreign Tax Authority ("FTA") inviting the Company to pay interest totaling approximately $70 million for failure to withhold taxes on a 2009 intercompany dividend. Prior to the payment of the dividend, PPG obtained a ruling from the FTA which indicated that the dividend was tax-exempt and eligible for a simplified no-withholding procedure provided that certain administrative criteria were met. The FTA is now asserting that PPG did not meet all of the administrative criteria for the simplified procedure, and consequently taxes should have been withheld by the dividend payer, which would have made the dividend recipient eligible for a refund. The Company disagrees with the FTA's assertion. In March 2015, PPG received a formal assessment from the FTA. PPG plans to vigorously defend against the assessment.

Asbestos Matters

For over 30 years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. Most of PPG's potential exposure relates to allegations by plaintiffs that PPG should be liable for injuries involving asbestos-containing thermal insulation products, known as Unibestos, manufactured and distributed by Pittsburgh Corning Corporation ("PC"). PPG and Corning Incorporated are each 50% shareholders of PC. PPG has denied responsibility for, and has defended, all claims for any injuries caused by PC products. As of the April 16, 2000 order which stayed and enjoined asbestos claims against PPG (as discussed below), PPG was one of many defendants in numerous asbestos-related lawsuits involving approximately 114,000 claims served on PPG. During the period of the stay, which expired on its own terms on May 27, 2016, PPG generally has not been aware of the dispositions, if any, of these asbestos claims.

Background of PC Bankruptcy Plan of Reorganization

On April 16, 2000, PC filed for Chapter 11 Bankruptcy in the U.S. Bankruptcy Court for the Western District of Pennsylvania located in Pittsburgh, Pa. Accordingly, in the first quarter of 2000, PPG recorded an after-tax charge of $35 million for the write-off of all of its investment in PC. As a consequence of the bankruptcy filing and various motions and orders in that proceeding, the asbestos litigation against PPG (as well as against PC) had been stayed and the filing of additional asbestos suits against them had been enjoined until 30 days after the effective date of a confirmed plan of reorganization for PC substantially in accordance with the settlement arrangement among PPG and several other parties discussed below. The stay expired on May 27, 2016, 30 days after the effective date of a confirmed plan of reorganization.

On May 14, 2002, PPG announced that it had agreed with several other parties, including certain of its insurance carriers, the official committee representing asbestos claimants in the PC bankruptcy, and the legal representatives of future asbestos claimants appointed in the PC bankruptcy, on the terms of a settlement arrangement relating to certain asbestos claims against PPG and PC (the "2002 PPG Settlement Arrangement").

On March 28, 2003, Corning Incorporated announced that it had separately reached its own arrangement with the representatives of asbestos claimants for the settlement of certain asbestos claims against Corning Incorporated and PC (the "2003 Corning Settlement Arrangement").

The terms of the 2002 PPG Settlement Arrangement and the 2003 Corning Settlement Arrangement were incorporated into a bankruptcy reorganization plan for PC along with a disclosure statement describing the plan, which PC filed with the Bankruptcy Court on April 30, 2003. Amendments to the plan and disclosure statement were subsequently filed.

On November 26, 2003, after considering objections to the second amended disclosure statement and plan of reorganization, the Bankruptcy Court entered an order approving such disclosure statement and directing that it be sent to creditors, including asbestos claimants, for voting. In March 2004, the second amended PC plan of reorganization (the "second amended PC plan of reorganization") received the required votes to approve the plan with a channeling injunction for present and future asbestos claimants under §524(g) of the Bankruptcy Code. After voting results for the second amended PC plan of reorganization were received, the Bankruptcy Court judge conducted a hearing regarding the fairness of the settlement, including whether the plan would be fair with respect to present and future claimants, whether such claimants would be treated in substantially the same manner, and whether the protection provided to PPG and its participating insurers would be fair in view of the assets they would convey to the asbestos settlement trust (the "Trust") to be established as part of the second amended PC plan of reorganization. At that hearing, creditors and other parties in interest raised objections to the second amended PC plan of reorganization. Following that hearing, the Bankruptcy Court scheduled oral arguments for the contested items.

The Bankruptcy Court heard oral arguments on the contested items on November 17-18, 2004. At the conclusion of the hearing, the Bankruptcy Court agreed to consider certain post-hearing written submissions. In a further development, on February 2, 2005, the Bankruptcy Court established a briefing schedule to address whether certain aspects of a decision of the U.S. Third Circuit Court of Appeals in an unrelated case had any applicability to the second amended PC plan of reorganization. Oral arguments on these matters were subsequently held in March 2005. During an omnibus hearing on February 28, 2006, the Bankruptcy Court judge stated that she was prepared to rule on the PC plan of reorganization in the near future, provided certain amendments were made to the plan. Those amendments were filed, as directed, on March 17, 2006. After further conferences and supplemental briefings, in December 2006, the court denied confirmation of the second amended PC plan of reorganization, on the basis that the plan was too broad in the treatment of allegedly independent asbestos claims not associated with PC.

Terms of 2002 PPG Settlement Arrangement

PPG had no obligation to pay any amounts under the 2002 PPG Settlement Arrangement until 30 days after the second amended PC plan of reorganization was finally approved by an appropriate court order that was no longer subject to appellate review (the "Effective Date"). If the second amended PC plan of reorganization had been approved as proposed, PPG and certain of its insurers (along with PC) would have made payments on the Effective Date to the Trust, which would have provided the sole source of payment for all present and future asbestos bodily injury claims against PPG, its subsidiaries or PC alleged to be caused by the manufacture, distribution or sale of asbestos products by these companies. PPG would have conveyed the following assets to the Trust: (i) the stock it owns in PC and Pittsburgh Corning Europe, (ii) 2,777,778 shares of PPG's common stock and (iii) aggregate cash payments to the Trust of approximately $998 million , payable according to a fixed payment schedule over 21 years, beginning on June 30, 2003, or, if later, the Effective Date. PPG would have had the right, in its sole discretion, to prepay these cash payments to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. In addition to the conveyance of these assets, PPG would have paid $30 million in legal fees and expenses on behalf of the Trust to recover proceeds from certain historical insurance assets, including policies issued by certain insurance carriers that were not participating in the settlement, the rights to which would have been assigned to the Trust by PPG.

Under the proposed 2002 PPG Settlement Arrangement, PPG's participating historical insurance carriers would have made cash payments to the Trust of approximately $1.7 billion between the Effective Date and 2023. These payments could also have been prepaid to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. In addition, as referenced above, PPG would have assigned to the Trust its rights, insofar as they related to the asbestos claims to have been resolved by the Trust, to the proceeds of policies issued by certain insurance carriers that were not participating in the 2002 PPG Settlement Arrangement and from the estates of insolvent insurers and state insurance guaranty funds.

Under the proposed 2002 PPG Settlement Arrangement, PPG would have granted asbestos releases to all participating insurers, subject to a coverage-in-place agreement with certain insurers for the continuing coverage of premises claims (discussed below). PPG would have granted certain participating insurers full policy releases on primary policies and full product liability releases on excess coverage policies. PPG would have also granted certain other participating excess insurers credit against their product liability coverage limits.

If the second amended PC plan of reorganization incorporating the terms of the 2002 PPG Settlement Arrangement and the 2003 Corning Settlement Arrangement had been approved by the Bankruptcy Court, the Court would have entered a channeling injunction under §524(g) and other provisions of the Bankruptcy Code, prohibiting present and future claimants from asserting bodily injury claims after the Effective Date against PPG or its subsidiaries or PC relating to the manufacture, distribution or sale of asbestos-containing products by PC or PPG or its subsidiaries. The injunction would have also prohibited codefendants in those cases from asserting claims against PPG for contribution,

indemnification or other recovery. All such claims would have been filed with the Trust and only paid from the assets of the Trust.

Modified Third Amended PC Plan of Reorganization

To address the issues raised by the Bankruptcy Court in its December 2006 ruling, the interested parties engaged in extensive negotiations regarding the terms of a third amended PC plan of reorganization, including modifications to the 2002 PPG Settlement Arrangement. A modified third amended PC plan of reorganization (the "third amended PC plan of reorganization"), including a modified PPG settlement arrangement (the "2009 PPG Settlement Arrangement"), was filed with the Bankruptcy Court on January 29, 2009. The parties also filed a disclosure statement describing the third amended PC plan of reorganization with the court. The third amended PC plan of reorganization also includes a modified settlement arrangement of Corning Incorporated.

Several creditors and other interested parties filed objections to the disclosure statement. Those objections were overruled by the Bankruptcy Court by order dated July 6, 2009 approving the disclosure statement. The third amended PC plan of reorganization and disclosure statement were then sent to creditors, including asbestos claimants, for voting. The report of the voting agent, filed on February 18, 2010, revealed that all voting classes, including asbestos claimants, voted overwhelmingly in favor of the third amended PC plan of reorganization, which included the 2009 PPG Settlement Arrangement. In light of the favorable vote on the third amended PC plan of reorganization, the Bankruptcy Court conducted a hearing regarding the fairness of the proposed plan, including whether (i) the plan would be fair with respect to present and future claimants, (ii) such claimants would be treated in substantially the same manner, and (iii) the protection provided to PPG and its participating insurers would be fair in view of the assets they would convey to the Trust to be established as part of the third amended PC plan of reorganization. The hearing was held in June of 2010. The remaining objecting parties (a number of objections were resolved through plan amendments and stipulations filed before the hearing) appeared at the hearing and presented their cases. At the conclusion of the hearing, the Bankruptcy Court established a briefing schedule for its consideration of confirmation of the plan and the objections to confirmation. That briefing was completed and final oral arguments held in October 2010. On June 16, 2011 the Bankruptcy Court issued a decision denying confirmation of the third amended PC plan of reorganization.

Following the June 16, 2011 ruling, the third amended PC plan of reorganization was the subject of negotiations among the parties in interest, amendments, proposed amendments and hearings. PC then filed an amended PC plan of reorganization on August 17, 2012. Objections to the plan, as amended, were filed by three entities. One set of objections was resolved by PC, and another set merely restated for appellate purposes objections filed by a party that the Bankruptcy Court previously overruled. The Bankruptcy Court heard oral argument on the one remaining set of objections filed by the remaining affiliated insurer objectors on October 10, 2012. At the conclusion of that argument, the Bankruptcy Court set forth a schedule for negotiating and filing language that would resolve some, but not all, of the objections to confirmation advanced by the insurer objectors. On October 25, 2012, PC filed a notice regarding proposed confirmation order language that resolved those specific objections. Following additional hearings and status conferences, technical amendments to the PC plan of reorganization were filed on May 15, 2013. On May 16, 2013, the Bankruptcy Court issued a memorandum opinion and interim order confirming the PC plan of reorganization, as amended, and setting forth a schedule for motions for reconsideration. Following the filing of motions for reconsideration, the Bankruptcy Court, on May 24, 2013, issued a revised memorandum opinion and final order confirming the modified third amended plan of reorganization and issuing the asbestos permanent channeling injunction. The remaining insurer objectors filed a motion for reconsideration on June 6, 2013. On November 12, 2013, the Bankruptcy Court issued an order granting in part (by clarifying the scope of the channeling injunction in accordance with the agreement of the parties as expressed at the time of final argument on the motion for reconsideration) and otherwise denying the motion for reconsideration. Notices of appeal to the U. S. District Court for the Western District of Pennsylvania were filed by the remaining objecting parties. On March 17, 2014, the appeal of the remaining non-insurer objecting party was dismissed voluntarily, leaving only two affiliated insurance companies as appellants.

On September 30, 2014, the District Court issued a memorandum opinion and order affirming the confirmation order. On October 28, 2014, the remaining insurance company objectors filed a Notice of Appeal to the U.S. Third Circuit Court of Appeals challenging the affirmance order. In addition to the notice of appeal, the objecting insurers filed a motion with the District Court, which was opposed by PPG and the other plan proponents and plan supporters, that sought relief from the confirmation order based on alleged misconduct by members of the plaintiffs' bar in the prosecution of certain asbestos claims in the tort system. On August 12, 2015, the District Court denied that motion. The objecting insurers filed a Notice of Appeal with the U.S. Third Circuit Court of Appeals challenging this decision as well. The two appeals were subsequently consolidated for disposition by the Court of Appeals. The Court of Appeals dismissed both appeals, by agreement of the parties, on January 7, 2016. During February 2016, the Bankruptcy Court entered an order approving the trustees of the Trust. Also in February, a motion to approve technical amendments to the PC plan

of reorganization was filed. No objections to that motion were filed, and the Bankruptcy Court granted the motion on March 24, 2016.

On April 26, 2016, PC filed a notice advising the Bankruptcy Court that all conditions precedent set forth in Section 8.2 of the third amended PC Plan of reorganization had been waived or satisfied and that the effective date would occur on April 27, 2016. As a result, PPG's initial contributions were due on or before June 9, 2016 (the "Funding Effective Date").

Asbestos Claims Subject to Bankruptcy Court's Channeling Injunction

The Bankruptcy Court's channeling injunction, entered under §524(g) of the Bankruptcy Code prohibits present and future claimants from asserting asbestos claims against PC. With regard to PPG, the channeling injunction by its terms prohibits present and future claimants from asserting claims against PPG that arise, in whole or in part, out of exposure to Unibestos, or any other asbestos or asbestos-containing products manufactured, sold and/or distributed by PC, or asbestos on or emanating from any PC premises. The injunction by its terms also prohibits codefendants in these cases that are subject to the channeling injunction from asserting claims against PPG for contribution, indemnification or other recovery. Such injunction also precludes the prosecution of claims against PPG arising from alleged exposure to asbestos or asbestos-containing products to the extent that a claimant is alleging or seeking to impose liability, directly or indirectly, for the conduct of, claims against or demands on PC by reason of PPG's: (i) ownership of a financial interest in PC; (ii) involvement in the management of PC, or service as an officer, director or employee of PC or a related party; (iii) provision of insurance to PC or a related party; or (iv) involvement in a financial transaction affecting the financial condition of PC or a related party. The foregoing PC related claims are referred to as "PC Relationship Claims" and constitute, in PPG management's opinion, the vast majority of the pending asbestos personal injury claims against PPG. All claims channeled to the Trust will be paid only from the assets of the Trust.

Asbestos Claims Retained by PPG

The channeling injunction does not extend to any claim against PPG that arises out of exposure to any asbestos or asbestos-containing products manufactured, sold and/or distributed by PPG or its subsidiaries, or for which they are otherwise alleged to be liable, that is not a PC Relationship Claim, and in this respect differs from the channeling injunction contemplated by the second amended PC plan of reorganization filed in 2003. While management believes that the vast majority of the approximately 114,000 claims against PPG alleging personal injury from exposure to asbestos relate to products manufactured, distributed or sold by PC, the potential liability for any non-PC Relationship Claims is retained by PPG. Because a determination of whether an asbestos claim is a non-PC Relationship Claim would typically not be known until shortly before trial and because the filing and prosecution of asbestos claims (other than certain premises claims) against PPG had been enjoined since April 2000, the actual number of non-PC Relationship Claims that may be pending at the expiration of the stay or the number of additional claims that may be filed against PPG in the future cannot be determined at this time. PPG intends to defend against all such claims vigorously and their ultimate resolution in the court system is expected to occur over a period of years.

In addition, similar to what was contemplated by the second amended PC plan of reorganization, the channeling injunction does not extend to claims against PPG alleging personal injury caused by asbestos on premises owned, leased or occupied by PPG (so called "premises claims"), which generally had been subject to the stay imposed by the Bankruptcy Court, although motions to lift the stay as to individual premises claims have been granted from time to time. Historically, a small proportion of the claims against PPG and its subsidiaries have been premises claims, and based upon review and analysis, PPG believes that the number of premises claims currently comprises less than 2% of the total asbestos related claims against PPG. Beginning in late 2006, the Bankruptcy Court lifted the stay with respect to certain premises claims against PPG. As a result, PPG and its primary insurers have settled approximately 580 premises claims. PPG's insurers agreed to provide insurance coverage for a major portion of the payments made in connection with the settled claims, and PPG accrued the portion of the settlement amounts not covered by insurance. Primarily as a result of motions practice in the Bankruptcy Court with respect to the application of the stay to premises claims, PPG faces approximately 250 active premises claims. PPG is currently engaged in the process of settling or otherwise resolving approximately 45 of these claims. Of the remaining 205 active premises claims, approximately 115 such claims have been initiated in lawsuits filed in various state courts, primarily in Louisiana, West Virginia, Ohio, Illinois, and Pennsylvania, and are the subjects of active litigation and are being defended by PPG. PPG believes that any financial exposure resulting from such premises claims, taking into account available insurance coverage, will not have a material adverse effect on PPG's consolidated financial position, liquidity or results of operations.

PPG's Funding Obligations

On April 26, 2016, PPG's equity interest in PC was canceled. On the Funding Effective Date, PPG conveyed the stock it owned in Pittsburgh Corning Europe ("PCE") and transferred 2,777,778 shares of PPG's common stock. PPG had the right, in its sole discretion, to prepay future pre-tax cash payments to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date or $61 million . PPG exercised that right and made a cash payment to the Trust in the amount of $764 million on the Funding Date, thereby satisfying PPG's cash payment obligations due to the Trust on the Funding Effective Date and in the future. PPG's historical insurance carriers participating in the third amended PC plan of reorganization are required to make cash payments to the Trust of approximately $1.7 billion between the Funding Effective Date and 2027. These payments can also be prepaid to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. PPG granted asbestos releases and indemnifications to all participating insurers, subject to amended coverage-in-place arrangements with certain insurers for remaining coverage of premises claims. PPG granted certain participating insurers full policy releases on primary policies and full product liability releases on excess coverage policies. PPG also granted certain other participating excess insurers credit against their product liability coverage limits.

PPG's obligation under the 2009 PPG Settlement Arrangement at December 31, 2008 was $162 million less than the amount that would have been due under the 2002 PPG Settlement Arrangement. This reduction is attributable to a number of negotiated provisions in the 2009 PPG Settlement Arrangement, including the provisions relating to the channeling injunction under which PPG retains liability for any non-PC Relationship Claims. PPG will retain such amount as a reserve for asbestos-related claims that will not be channeled to the Trust, as this amount represents PPG's best estimate of its liability for these claims. PPG does not have sufficient current claim information or settlement history on which to base a better estimate of this liability, in light of the fact that the Bankruptcy Court's stay has been in effect since 2000. As a result, PPG's reserve at June 30, 2016 and December 31, 2015 for asbestos-related claims that will not be channeled to the Trust is $162 million . This amount is included within "Other liabilities" on the accompanying consolidated balance sheets. In addition, under the 2009 PPG Settlement Arrangement, PPG will retain for its own account rights to recover proceeds from certain historical insurance assets, including policies issued by non-participating insurers. Rights to recover these proceeds would have been assigned to the Trust by PPG under the 2002 PPG Settlement Arrangement.

Following the effective date of the third amended PC plan of reorganization, as amended, and the lifting of the Bankruptcy Court stay, PPG will monitor the activity associated with asbestos claims which are not channeled to the Trust pursuant to the third amended PC plan of reorganization, and evaluate its estimated liability for such claims and related insurance assets then available to the Company as well as underlying assumptions on a periodic basis to determine whether any adjustment to its reserve for these claims is required.

On June 9, 2016, PPG fully funded its portion of the Trust that was established by the U.S. Bankruptcy Court for the Western District of Pennsylvania in May 2016. The following table outlines the impact on PPG's financial statements for the six months ended June 30, 2016 including the change in fair value of the PPG stock contributed to the Trust and the equity forward instrument and the increase in the net present value of the payments made to the trust.

	Consolidated Balance Sheet				
	Asbestos Settlement Liability		Equity Forward (Asset) Liability	Pre-tax Charge (Income)	Cash Outflow
($ in millions)	Current	Long-term			
Balances as of December 31, 2015	**$ 796**	**252**	**(223)**	**—**	**—**
2016 Activity					
Change in fair value:					
PPG stock	34	—	—	34	—
Equity forward instrument	—	—	(35)	(35)	—
Accretion of asbestos liability	—	6	—	6	—
Settlement of equity forward instrument with counterparty	—	—	(49)	—	(49)
Contribution of PCE shares and relinquishment of PC investment	(15)	—	—	—	—
Contribution of 2,777,778 shares of PPG stock to the PC Trust	(308)	—	308	—	—
Contribution of cash to the PC Trust	(506)	(258)	—	—	(764)
Reclassifications	(1)	—	(1)	—	—
Balance as of and Activity for the six months ended June 30, 2016	**$ —**	**$ —**	**$ —**	**$ 5**	**$ (813)**

Environmental Matters

It is PPG's policy to accrue expenses for environmental contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Reserves for environmental contingencies are exclusive of claims against third parties and are generally not discounted. In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time. See Note 13, "Commitments and Contingent Liabilities," under Item 8 of the 2015 Form 10-K for additional description of the following environmental matters.

As of June 30, 2016 and December 31, 2015 , PPG had reserves for environmental contingencies associated with PPG's former chromium manufacturing plant in Jersey City, N.J. and associated sites ("New Jersey Chrome") and for other environmental contingencies, including National Priority List sites and legacy glass and chemical manufacturing sites. These reserves are reported as "Accounts payable and accrued liabilities" and "Other liabilities" in the accompanying condensed consolidated balance sheet.

Environmental Reserves

($ in millions)	June 30, 2016	December 31, 2015
New Jersey Chrome	$ 121	$ 133
Other	97	100
Total	$ 218	$ 233
Current portion	$ 57	$ 51

Pre-tax charges against income for environmental remediation costs are included in "Other charges" in the accompanying condensed consolidated statement of income. The pre-tax charges and cash outlays related to such environmental remediation for the three and six months ended June 30, 2016 and 2015 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Environmental remediation pre-tax charges	$ 3	$ 1	8	6
Cash outlays for environmental remediation activities	$ 9	$ 20	23	56

Remediation: New Jersey Chrome

In June 2009, PPG entered into a settlement agreement with the New Jersey Department of Environmental Protection ("NJDEP") and Jersey City (which had asserted claims against PPG for lost tax revenue) which was in the form of a Judicial Consent Order (the "JCO"). Under the JCO, PPG accepted sole responsibility for the remediation activities at its former chromium manufacturing location in Jersey City, New Jersey and 19 additional sites. The principal contaminant of concern is hexavalent chromium. The JCO also provided for the appointment of a court-approved Site Administrator who is responsible for establishing a master schedule for the remediation of the 20 PPG sites which existed at that time. One site was subsequently removed from the JCO process during 2014 and will be remediated separately at a future date. A total of 19 sites remain subject to the JCO process.

The most significant assumptions underlying the estimate of remediation costs for all New Jersey Chrome sites are those related to the extent and concentration of chromium impacts in the soil, as these determine the quantity of soil that must be treated in place, the quantity that will have to be excavated and transported for offsite disposal, and the nature of disposal required. The reserve for the estimated costs to remediate all New Jersey Chrome sites are exclusive of any third party indemnification, as the recovery of any such amounts is uncertain.

Groundwater remediation at PPG's former chromium manufacturing site in Jersey City and five adjacent sites is expected to occur over several years after NJDEP's approval of a work plan. Ongoing groundwater monitoring will be utilized to develop a final groundwater remedial action work plan which is currently expected to be submitted to NJDEP no later than 2020.

PPG's financial reserve for remediation of all New Jersey Chrome sites is $121 million at June 30, 2016 . The major cost components of this liability continue to be related to transportation and disposal of impacted soil, as well as

construction services. These components each account for approximately 32% and 40% of the accrued amount, respectively.

There are multiple, future events yet to occur, including further remedy selection and design, remedy implementation and execution and applicable governmental agency or community organization approvals. Considerable uncertainty exists regarding the timing of these future events for the New Jersey Chrome sites. Final resolution of these events is expected to occur over the next several years. As these events occur and to the extent that the cost estimates of the environmental remediation remedies change, the existing reserve for this environmental remediation matter will be adjusted.

Remediation: Other Legacy Sites

Among other sites at which PPG is managing environmental liabilities, remedial actions are occurring at a legacy chemical manufacturing site in Barberton, Ohio and legacy plate glass manufacturing sites near Ford City, Pennsylvania and in Kokomo, Indiana. With respect to certain waste sites where PPG is alleged to have contributed contaminants, the financial condition of other potentially responsible parties contributes to the uncertainty of estimating PPG's final costs. Although contributors of waste to sites involving other potentially responsible parties may face governmental agency assertions of joint and several liability, in general, final allocations of costs are made based on the relative contributions of wastes to such sites. PPG is generally not a major contributor to such sites.

In March 2016, the Natural Resource Trustees for the Calcasieu River Estuary (Louisiana Department of Environmental Quality, The United States Environmental Protection Agency and the United States Department of the Interior) reached an agreement in principle with PPG and two other potentially responsible parties to resolve the Trustees' claims for natural resource damages alleged to have been caused by the release of hazardous substances into the Estuary. PPG's share of this settlement is estimated to be approximately $3.6 million , for which a reserve has been established.

Remediation: Reasonably Possible Matters

In addition to the amounts currently reserved for environmental remediation, the Company may be subject to loss contingencies related to environmental matters estimated to be as much as $75 million to $200 million . Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence. These reasonably possible unreserved losses relate to environmental matters at a number of sites. The loss contingencies related to these sites include significant unresolved issues such as the nature and extent of contamination at these sites and the methods that may have to be employed to remediate them.

The impact of evolving programs, such as natural resource damage claims, industrial site re-use initiatives and domestic and international remediation programs, also adds to the present uncertainties with regard to the ultimate resolution of this unreserved exposure to future loss. The Company's assessment of the potential impact of these environmental contingencies is subject to considerable uncertainty due to the complex, ongoing and evolving process of investigation and remediation, if necessary, of such environmental contingencies, and the potential for technological and regulatory developments.

Other Matters

The Company had outstanding letters of credit and surety bonds of $175 million and guarantees of $19 million as of June 30, 2016 . The Company does not believe any loss related to such guarantees is likely.

16 .Reportable Business Segment Information

PPG is a multinational manufacturer with 11 operating segments that are organized based on the Company's major product lines. These operating segments are also the Company's reporting units for purposes of testing goodwill for impairment. The operating segments have been aggregated based on economic similarities, the nature of their products, production processes, end-use markets and methods of distribution into three reportable business segments.

The Performance Coatings reportable segment is comprised of the refinish, aerospace, architectural coatings – Americas and Asia Pacific, architectural coatings - EMEA, and protective and marine coatings operating segments. This reportable segment primarily supplies a variety of protective and decorative coatings, sealants and finishes along with paint strippers, stains and related chemicals, as well as transparencies and transparent armor.

The Industrial Coatings reportable segment is comprised of the automotive original equipment manufacturer ("OEM") coatings, industrial coatings, packaging coatings, and the specialty coatings and materials operating segments. This reportable segment primarily supplies a variety of protective and decorative coatings and finishes along with adhesives, sealants, metal pretreatment products, optical monomers and coatings, precipitated silicas, *Teslin*® and other specialty materials.

The Glass reportable segment is comprised of the flat glass and fiber glass operating segments. This reportable segment primarily supplies flat glass and continuous-strand fiber glass products.

Reportable segment net sales and segment income for the three and six months ended June 30, 2016 and 2015 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Net sales:				
Performance Coatings	$ 2,338	$ 2,410	$ 4,377	$ 4,465
Industrial Coatings	1,444	1,411	2,816	2,751
Glass	282	279	543	546
Total	$ 4,064	$ 4,100	$ 7,736	$ 7,762
Segment income:				
Performance Coatings	$ 428	$ 411	$ 707	$ 673
Industrial Coatings	292	260	557	504
Glass	43	37	71	67
Total	763	708	1,335	1,244
Corporate	(59)	(65)	(120)	(132)
Interest expense, net of interest income	(24)	(24)	(48)	(42)
Legacy items [(a)]	(10)	(6)	(20)	(18)
Asset write-downs	(10)	—	(14)	—
Gain from sale of equity affiliate	20	—	20	—
Transaction-related costs [(b)]	(7)	(21)	(9)	(30)
Business restructuring	—	(140)	—	(140)
Income from continuing operations before income taxes	$ 673	$ 452	$ 1,144	$ 882

(a) Legacy items include current costs related to former operations of the Company, including pension and other postretirement benefit costs, certain charges for legal matters and environmental remediation costs, and certain other charges which are not associated with PPG's current business portfolio, including the impact of the asbestos settlement. Until April 2016, legacy items also include equity earnings from PPG’s minority investment in Pittsburgh Glass Works, LLC.

(b) Transaction-related costs include advisory, legal, accounting, valuation and other professional or consulting fees incurred to effect significant acquisitions, as well as similar fees and other costs to effect disposals not classified as discontinued operations. These costs also include the flow-through cost of sales for the step up to fair value of inventories acquired in acquisitions. These costs also include certain severance costs and charges associated with the Company's recent business portfolio transformation.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Executive Overview

Below are our key financial results for the three months ended June 30, 2016 :

- Net sales for the three months ended were $4.1 billion , down less than one percent compared to the prior year, primarily due to unfavorable foreign currency translation (-2%) offset by sales from acquired businesses (+1%).
- Net sales for the six months ended were $7.7 billion , consistent with the prior year, primarily due to sales from acquired businesses (+2%) and higher sales volumes, offset by unfavorable foreign currency translation (-3%).
- Cost of sales, exclusive of depreciation and amortization was $2.2 billion , down 4.1% for the three months ended June 30, 2016 and was $4.2 billion , down 3.3% for the six months ended June 30, 2016.
- Selling, general and administrative ("SG&A") expenses was $1.0 billion , down 0.2% for the three months ended June 30, 2016 and was $1.9 billion , down 0.4% for the six months ended June 30, 2016. As a percentage of sales, SG&A increased 0.2% and 0.1% for the three and six months ended June 30, 2016, respectively.
- Income before income taxes was $673 million and $1.1 billion for the three and six months ended June 30, 2016, respectively.
- The effective tax rate for the three months and six months ended June 30, 2016 was 44.1% and 36.2% , respectively.
- Net income from continuing operations was $370 million and $717 million for the three and six months ended June 30, 2016, respectively.
- Earnings per diluted share was $1.37 and $2.66 for the three and six months ended June 30, 2016, respectively.
- Cash flows from operating activities decreased $211 million year over year for the six months ended June 30, 2016. Operating cash flow decreased primarily due to funding of the asbestos settlement trust ($813 million) and higher cash tax payments ($27 million) partially offset by lower working capital ($376 million) and lower pension contributions ($270 million).
- Capital expenditures, including acquisitions (net of cash acquired), was $178 million for the six months ended June 30, 2016.
- During the six months ended June 30, 2016 , the Company paid $203 million in dividends and also repurchased approximately $150 million of its outstanding common stock. On April 21, 2016, the Company raised the per-share dividend by 11% to $0.40 per share.

Performance in the Second Quarter of 2016 Compared to the Second Quarter of 2015

Performance Overview

Net Sales

($ in millions, except percentages)	Three Months Ended June 30		Percent Change
	2016	2015	2016 vs. 2015
The Americas			
United States and Canada	$ 1,918	$ 1,960	(2.1)%
Latin America	344	367	(6.3)%
Europe, Middle East and Africa (EMEA)	1,203	1,158	3.9 %
Asia-Pacific	599	615	(2.6)%
Total	$ 4,064	$ 4,100	(0.9)%

2016 vs. 2015

Net sales decreased $36 million due to the following:

- Foreign currency translation (-2%)

Partially offset by:

- *Net sales attributable acquired businesses (+1%)*

Foreign currency translation reduced net sales by $92 million as the U.S. dollar strengthened against most foreign currencies versus the prior year, notably the Mexican Peso, Chinese Yuan, British Pound, Canadian Dollar and certain emerging region currencies. These were partially offset by modest strengthening of the Euro versus the U.S. Dollar.

Acquired businesses added $64 million of sales in 2016, primarily IVC, supplemented by several other acquisitions made in 2015.

In the U.S. and Canada region, sales volumes declined reversing an improving trend over the prior three sequential quarters. Results were mixed by business unit with growth in packaging, general industrial, and automotive refinish coatings offset by declines in architectural and automotive OEM coatings.

Sales volume growth occurred primarily in EMEA led by strong growth in automotive OEM, general industrial, packaging and aerospace coatings. Architectural coatings - EMEA experienced modest volume declines, primarily due to unfavorable weather patterns, including flooding, across portions of western Europe. The second quarter 2016 was the sixth consecutive quarter of broad-based sales volume growth in the EMEA region.

Sales volume growth in Asia-Pacific accelerated in comparison to the first quarter of 2016 results, with solid volume gains in most businesses, including automotive OEM and refinish, general industrial and packaging coatings. From a country perspective, China, India and Australia grew sales volumes versus the prior year, with Korean volumes declining primarily due to lower marine shipbuilding activity.

In Latin America, sales volumes grew in aggregate led by architectural and packaging coatings. Within the region, sales volumes continued to grow in Mexico and Central America and declined in Brazil due to weak overall economic conditions.

Cost of Sales, exclusive of depreciation and amortization

($ in millions, except percentages)	Three Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Cost of sales, exclusive of depreciation and amortization	$ 2,190	$ 2,283	(4.1)%
Cost of sales as a percentage of net sales	53.9%	55.7%	(1.8)%

2016 vs. 2015

Cost of sales, exclusive of depreciation and amortization, decreased $93 million (-4.1%) including the following:

- *Foreign currency translation*
- *Lower manufacturing costs*

Partially offset by:

- *Cost of sales attributable to acquired businesses*

Selling, general and administrative expenses

($ in millions, except percentages)	Three Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Selling, general and administrative expenses	$ 956	$ 954	0.2%
Selling, general and administrative expenses as a percentage of net sales	23.5%	23.3%	0.2%

2016 vs. 2015

SG&A increased $2 million (+0.2%) due to the following:

- *SG&A expenses attributable to acquired businesses*
- *Overhead cost inflation*

Partially offset by:

- *Foreign currency translation*
- *Restructuring cost savings*
- *Lower stock-based compensation expense*

Other costs and income

($ in millions, except percentages)	Three Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Interest expense, net of Interest income	$ 24	$ 24	— %
Other charges	$ 32	$ 34	(5.9)%
Other income	$ (53)	$ (38)	39.5 %

Other income

Other income for the three months ended June 30, 2016 includes a $20 million pre-tax gain on the sale of PPG's ownership interest in an equity affiliate investment, offset by lower equity affiliate income and lower royalty income.

Effective tax rate and earnings per diluted share

($ in millions, except percentages)	Three Months Ended June 30		Percent Change
	2016	2015	2016 vs. 2015
Income tax expense	$ 297	$ 110	170.0%
Effective tax rate	44.1%	24.3%	19.8%
Adjusted effective tax rate, continuing operations*	25.0%	24.5%	0.5%
Earnings per diluted share, continuing operations	$ 1.37	$ 1.23	11.4%
Adjusted earnings per diluted share*	$ 1.85	$ 1.67	10.8%

*See Regulation G Reconciliation.

The full year effective tax rate for 2016 is expected to be higher as a result from a shift in PPG's global mix of earnings toward jurisdictions with higher statutory tax rates, due in part to recent acquisitions. Tax expense for the three months ended June 30, 2016 includes a net tax charge of $128 million associated with PPG's funding of the Pittsburgh Corning asbestos settlement trust. Refer to Note 9, "Income Taxes" for a discussion of the tax charge.

Earnings per diluted share for the three months ended June 30, 2016 grew year-over-year from 2015. The Company benefited from the 7.0 million shares repurchased in 2015 and 1.5 million shares repurchased in the first quarter of 2016.

Regulation G Reconciliation - Results from Operations

PPG Industries believes investors' understanding of the company's operating performance is enhanced by the disclosure of net income, earnings per diluted share and the effective tax rate adjusted for certain charges. PPG's management considers this information useful in providing insight into the company's ongoing operating performance because it excludes the impact of items that cannot reasonably be expected to recur on a quarterly basis or that are not attributable to our primary operations. Net income and earnings per diluted share adjusted for these items are not recognized financial measures determined in accordance with U.S. generally accepted accounting principles (GAAP) and should not be considered a substitute for net income or earnings per diluted share or other financial measures as computed in accordance with U.S. GAAP. In addition, adjusted net income, earnings per diluted share and the effective tax rate may not be comparable to similarly titled measures as reported by other companies.

Income before income taxes is reconciled to adjusted income before income taxes, the effective tax rate from continuing operations is reconciled to the adjusted effective tax rate from continuing operations and net income (attributable to PPG) and earnings per share – assuming dilution (attributable to PPG) are reconciled to adjusted net income (attributable to PPG) and adjusted earnings per share – assuming dilution below:

	Three months ended June 30, 2016				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share
As reported, continuing operations	$ 673	$ 297	44.1%	$ 370	$ 1.37
Adjusted for:					
Gain from sale of equity investment	(20)	(7)	37.6%	(13)	(0.05)
Transaction-related costs [(1)]	7	2	37.6%	5	0.02
Net tax effect of asbestos settlement funding	—	(128)	N/A	128	0.48
Asset write-downs	10	3	25.0%	8	0.03
Adjusted, continuing operations, excluding certain charges	$ 670	$ 167	25.0%	$ 498	$ 1.85

	Three months ended June 30, 2015				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share
As reported, continuing operations	$ 452	$ 110	24.3%	$ 337	$ 1.23
Adjusted for:					
Transaction-related costs [(1)]	21	6	28.6%	15	0.05
Business restructuring	140	34	24.3%	106	0.39
Adjusted, continuing operations, excluding certain charges	$ 613	$ 150	24.5%	$ 458	$ 1.67

(1) *Transaction-related costs include advisory, legal, accounting, valuation, and other professional or consulting fees incurred to effect significant acquisitions, as well as similar fees and other costs to effect disposals not classified as discontinued operations. These costs also include the flow-through cost of sales for the step up to fair value of inventories acquired in acquisitions. These costs also include certain charges associated with the Company's business portfolio transformation.*

Performance of Reportable Business Segments

Performance Coatings

	Three Months Ended June 30		$ Change	% Change
($ in millions, except per share amounts)	**2016**	**2015**	**2016 vs. 2015**	**2016 vs. 2015**
Net sales	$ 2,338	$ 2,410	$ (72)	(3.0)%
Segment income	$ 428	$ 411	$ 17	4.1 %

2016 vs. 2015

Performance Coatings net sales decreased (-3%) due to the following:

- *Unfavorable foreign currency translation of approximately $60 million (-2%)*
- *Lower sales volumes (-2%)*

Partially offset by:

- *Net sales from acquisitions (+1%)*
- *Slightly higher selling prices*

Architectural coatings - EMEA sales volumes declined by a low-single-digit percentage year-over-year, after achieving improved volumes over the prior three sequential quarters. The modest decline in the quarter is primarily due to unfavorable weather patterns, including flooding across portions of western Europe. Sales volumes remained mixed across the region and by month.

Architectural coatings - Americas and Asia-Pacific organic net sales decreased a mid-single-digit percentage in the second quarter versus the prior year. Sales volumes declined considerably in Brazil and China, with both countries declining more than 20 percent, reflecting regional end-use market weakness. Local currency architectural coatings sales growth in Mexico was more than double the country's GDP growth due to continued market penetration and over 100 new store openings year-to-date. Additionally, architectural coatings sales continued to expand in Central America, up a high-double digit percentage, as the Company continues to leverage the Comex and Consorcio Latinoamericano acquisitions and is successfully establishing a presence in the region. In the U.S. and Canada region, company-owned store volumes increased modestly but were more than offset by contraction in the independent dealer channel. In aggregate, national retail accounts (DIY) sales volumes were lower year-over-year due to a comparison against solid volume growth in the second quarter of 2015, along with current year initiatives by a DIY customer to structurally and permanently lower inventory balances. Overall sales of PPG products to DIY consumers, or "out-the-door" sales were positive year over year.

Protective and marine coatings sales volumes declined by a low-single-digit percentage year-over-year as growth in protective coatings was offset by declines in marine coatings, primarily due to lower new ship-building activity and the ongoing impact of decreased capital investment and maintenance in the oil and gas sector. Year-over-year sales volumes declined in all regions except Latin America which improved primarily due to acquisition-related sales synergies of legacy PPG products through the Comex concessionaire network.

Aerospace coatings returned to sales volumes growth increasing by a low-single digit percentage versus the prior year. Regionally, sales volume growth was the largest in Asia-Pacific and Europe, while U.S. volumes were flat.

Automotive refinish coatings organic sales grew at a mid-single-digit percentage rate year-over-year, outperforming end-use market demand levels in the U.S. and Canada and the Asia-Pacific regions.

Segment income increased $17 million (+4%) year-over-year despite the impact of lower sales volumes in the U.S. and Canada. The increase in segment income was primarily due to acquisition-related income and a continued strong cost management, including additional business restructuring benefits. Unfavorable foreign currency translation reduced segment income by $10 million.

Looking Ahead

In the third quarter, we expect lower quarterly sales sequentially due to normal seasonal business patterns, as the second quarter is historically the strongest period of the year in most business units. From a strategic business unit perspective, we expect automotive refinish coatings trends to continue in the third quarter, led by sustained high adoption levels of PPG's leading waterborne technologies and higher aggregate global end-use market demand. For aerospace coatings, we expect a continuation of year-over-year sales volume improvement in the third quarter. We expect positive sales volume growth to return to architectural coatings - EMEA in the third quarter, but remain uneven by country. For the architectural coatings - Americas and Asia Pacific business, we expect year-over-year sales volumes to improve notably in the U.S. and Canada region in the third quarter, as various growth initiatives which have been underway for the past year begin to provide tangible results. We expect above-market performance to continue in Mexico and Central America. We also anticipate a return to very modest overall growth in protective and marine coatings led by a stabilization of protective coatings demand due to a leveling of oil and

gas sector demand activity, partially offset by further weakness in marine new build coatings. We expect acquisition sales to be $15 million to $20 million, primarily related to Sealants Europe SAS. Unfavorable foreign currency translation impacts will remain sizable year-over-year.

Industrial Coatings

	Three Months Ended June 30		$ Change	% Change
($ in millions, except per share amounts)	**2016**	**2015**	**2016 vs. 2015**	**2016 vs. 2015**
Net sales	$ 1,444	$ 1,411	$ 33	2.3%
Segment income	$ 292	$ 260	$ 32	12.3%

2016 vs. 2015

Industrial Coatings segment net sales increased (+2%) due to the following:

- *Net sales attributable to acquired businesses (+3%)*
- *Higher sales volumes (+3%), led by growth in Europe and Asia Pacific.*

Partially offset by:

- *Unfavorable foreign currency translation of approximately $30 million (-2.5%)*
- *Lower selling prices*

PPG's global automotive OEM coatings business sales volumes increased by a low-single-digit percentage versus the prior year, consistent with industry rates, reflecting moderate global automotive industry production growth. PPG's sales volumes differed by region, led by growth in Europe and Asia, partially offset by declines in North America.

Global industrial and specialty coatings and materials sales volumes, in aggregate, grew a low-to-mid-single-digit percentage year-over-year outpacing global industrial production, and continued to improve on positive growth trends in the prior two sequential quarters led by expansion in Europe and Asia-Pacific. By end-use market, volume growth remained mixed with improved demand in automotive parts and accessories and expansion in coil and extrusion, partially offset by declines in heavy duty equipment.

Packaging coatings sales volumes were up a high single-digit percentage year-over-year, well above market, including growth in all regions, driven by continued strong sales growth momentum related to the adoption of new PPG can coatings technologies.

Segment income increased $32 million (+12%) primarily due to lower manufacturing costs including business restructuring benefits, higher sales volumes and acquisition-related income, partially offset by unfavorable foreign currency translation ($5 million).

Looking ahead

Looking forward, we expect 2016 third quarter net sales to be modestly lower sequentially versus the second quarter due to normal business seasonality. Automotive OEM aggregate sales volumes are expected to increase modestly in the third quarter versus prior year. Growth will remain varied by region, with the highest year-over-year industry build growth in Asia, where Chinese industry volumes declined in the prior year period. Overall global automotive industry production is seasonally lower in the third quarter versus the second quarter. For global industrial and specialty coatings and materials overall end-market growth trends are expected to continue. We also expect the strong growth trends in global packaging coatings sales to continue in all regions for the remainder of 2016; however, year-over-year growth comparisons will become more challenging given the strong growth rates achieved by the business in the second half of 2015. We anticipate that acquisition-related sales will total $75 million to $80 million, higher than the second quarter due to the Metokote Corporation acquisition which was completed in early July 2016. Based on current exchange rates, we expect foreign currency translation to remain unfavorable year-over-year.

Glass

($ in millions, except per share amounts)	Three Months Ended June 30		$ Change	% Change
	2016	2015	2016 vs. 2015	2016 vs. 2015
Net sales	$ 282	$ 279	$ 3	1.1%
Segment income	$ 43	$ 37	$ 6	16.2%

2016 vs. 2015

Glass segment net sales increased (+1%) due to the following:

- *Higher selling prices (+3%)*

Partially offset by:

- *Slightly lower sales volumes*
- *Lower sales stemming from a prior year flat glass production facility divestiture (-1%)*
- *Unfavorable foreign currency translation (-1%)*

Flat glass sales volumes declined a low-single digit percentage but were more than offset by higher selling prices. The sales volume decline reflected the impact of a facility outage at the company's Fresno, California facility which returned to normal operation early in the second quarter following a major first quarter scheduled maintenance outage. Sales also declined year-over-year due to the prior year sale of remaining finished goods inventory from a previously divested flat glass manufacturing facility. Despite the lower sales volumes, underlying flat glass end-use market demand remained solid.

Fiber glass sales volumes increased modestly year-over-year in the second quarter, as higher demand for automotive components in the U.S. and Europe was partially offset by lower demand in certain U.S. energy-related end-use markets.

Segment income increased $6 million (16%) due to higher organic sales and disciplined cost management, partially offset by $3 million of remaining repair-related and start-up costs stemming from the Fresno facility outage and lower equity affiliate income related to weaker consumer electronics demand in Asia.

Looking ahead

For the third quarter, PPG anticipates modestly higher flat glass demand seasonally and year-over-year, driven by a return to full system-wide production capability for the third quarter, and solid end-market demand. We anticipate higher selling prices will counter increasing natural gas costs. Fiber glass end use market demand is expected to be in line with the second quarter. Based on current exchange rates, we anticipate foreign currency translation to remain slightly unfavorable year-over-year.

PPG announced the sale of its European fiber glass business and its flat glass operating segment. These transactions are expected close in the second half of 2016. During the third quarter 2016, PPG will present the results of its flat glass operating segment as discontinued operations.

Performance for the first six months of 2016 Compared to the first six months of 2015

Performance Overview

Net Sales

($ in millions, except percentages)	Six Months Ended June 30		Percent Change
	2016	2015	2016 vs. 2015
The Americas			
United States and Canada	$ 3,643	$ 3,657	(0.4)%
Latin America	661	725	(8.8)%
Europe, Middle East and Africa (EMEA)	2,263	2,168	4.4 %
Asia Pacific	1,169	1,212	(3.5)%
Total	$ 7,736	$ 7,762	(0.3)%

2016 vs. 2015

Net sales decreased $26 million due to the following:

- *Unfavorable foreign currency translation (-3%)*

Partially offset by:

- *Net sales attributable to acquired businesses (+2%)*
- *Modestly higher sales volumes*

Foreign currency translation reduced net sales by $230 million as the U.S. dollar strengthened against most foreign currencies versus the prior year, notably the Mexican Peso, Chinese Yuan, British Pound and Canadian Dollar. These were partially offset by modest strengthening of the Euro versus the U.S. Dollar.

Acquired businesses added approximately $170 million of sales in 2016, primarily Revocoat and IVC, supplemented by several other acquisitions made in 2015.

Sales volume growth occurred primarily in EMEA and the emerging regions, while U.S. and Canada sales volumes declined.

Cost of Sales, exclusive of depreciation and amortization

($ in millions, except percentages)	Six Months Ended June 30		Percent Change
	2016	2015	2016 vs. 2015
Cost of sales, exclusive of depreciation and amortization	4,203	4,348	(3.3)%
Cost of sales as a percentage of net sales	54.3%	56.0%	(1.7)%

2016 vs. 2015

Cost of sales, exclusive of depreciation and amortization, decreased $145 million (-3.3%) due to the following:

- *Foreign currency translation*
- *Lower manufacturing costs, including restructuring savings*

Partially offset by:

- *Cost of sales attributable to acquired businesses*
- *Higher sales volumes*

Selling, general and administrative expenses

($ in millions, except percentages)	Six Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Selling, general and administrative expenses	1,875	1,867	0.4%
Selling, general and administrative expenses as a percentage of net sales	24.2%	24.1%	0.1%

2016 vs. 2015

SG&A expenses increased $8 million (+0.4%) due to the following:

- *SG&A expenses attributable to acquired businesses*
- *Overhead cost inflation*
- *Increased architectural coatings U.S. and Canada business spending of approximately $15 million on new product launches and other growth-related initiatives at major national accounts.*

Partially offset by:

- *Foreign currency translation*
- *Restructuring cost savings*

Other costs and income

($ in millions, except percentages)	Six Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Interest expense, net of Interest income	$ 48	$ 42	14.3 %
Other charges	$ 53	$ 59	(10.2)%
Other income	$ (71)	$ (69)	2.9 %

Interest expense, net of Interest income

Interest expense, net of Interest income increased $6 million in 2016 versus the prior year as a result of lower interest income earned on deposits.

Other income

Other income includes a $20 million pre-tax gain on the sale of PPG's minority ownership interest in an equity affiliate offset by lower equity affiliate income and lower royalty income.

Effective tax rate and earnings per diluted share

($ in millions, except percentages)	Six Months Ended June 30 2016	2015	Percent Change 2016 vs. 2015
Income tax expense	414	214	93.5%
Effective tax rate	36.2%	24.3%	11.9%
Adjusted effective tax rate, continuing operations*	25.0%	24.5%	0.5%
Earnings per diluted share, continuing operations	$ 2.66	$ 2.39	11.3%
Adjusted earnings per diluted share*	$ 3.16	$ 2.85	10.9%

*See Regulation G Reconciliation.

The full year effective tax rate for 2016 is expected to be higher as a result of a shift in PPG's global mix of earnings toward jurisdictions with higher statutory tax rates, due in part to recent acquisitions. Tax expense during the six months ended June 30, 2016 includes a net tax charge of $128 million associated with the funding of the Pittsburgh Corning asbestos settlement trust. Refer to Note 9, "Income Taxes" for a discussion of the tax charge.

Earnings per diluted share for the six months ended June 30, 2016 grew year-over-year from 2015. The Company benefited from the 7.0 million shares repurchased in 2015 and 1.5 million shares repurchased in the first quarter of 2016.

Regulation G Reconciliation - Results from Operations

PPG Industries believes investors' understanding of the company's operating performance is enhanced by the disclosure of net income, earnings per diluted share and the effective tax rate adjusted for certain charges. PPG's management considers this information useful in providing insight into the company's ongoing operating performance because it excludes the impact of items that cannot reasonably be expected to recur on a quarterly basis or that are not attributable to our primary operations. Net income and earnings per diluted share adjusted for these items are not recognized financial measures determined in accordance with U.S. generally accepted accounting principles (GAAP) and should not be considered a substitute for net income or earnings per diluted share or other financial measures as computed in accordance with U.S. GAAP. In addition, adjusted net income, earnings per diluted share and the effective tax rate may not be comparable to similarly titled measures as reported by other companies.

Income before income taxes is reconciled to adjusted income before income taxes, the effective tax rate from continuing operations is reconciled to the adjusted effective tax rate from continuing operations and net income (attributable to PPG) and earnings per share – assuming dilution (attributable to PPG) are reconciled to adjusted net income (attributable to PPG) and adjusted earnings per share – assuming dilution below:

	Six months ended June 30, 2016				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share
As reported, continuing operations	1,144	414	36.2%	$ 717	$ 2.66
Adjusted for:					
Gain from sale of equity investment	(20)	(7)	37.6%	(13)	(0.05)
Transaction-related costs [1]	9	3	33.3%	6	0.03
Net tax effect of asbestos settlement funding	—	(128)	NA	128	0.48
Asset write-downs	14	4	28.6%	11	0.04
Adjusted, continuing operations, excluding certain charges	$ 1,147	$ 286	25.0%	$ 849	$ 3.16

	Six months ended June 30, 2015				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share
As reported, continuing operations	882	214	24.3%	$ 658	$ 2.39
Includes:					
Transaction-related costs [1]	30	10	33.3%	21	0.07
Business restructuring	140	34	24.3%	106	0.39
Adjusted, continuing operations, excluding certain charges	$ 1,052	$ 258	24.5%	$ 785	$ 2.85

(1) *Transaction-related costs include advisory, legal, accounting, valuation, and other professional or consulting fees incurred to effect significant acquisitions, as well as similar fees and other costs to effect disposals not classified as discontinued operations. These costs also include the flow-through cost of sales for the step up to fair value of inventories acquired in acquisitions. These costs also include certain charges associated with the Company's business portfolio transformation.*

Performance of Reportable Business Segments

Performance Coatings

	Six Months Ended June 30		$ Change	% Change
($ in millions, except per share amounts)	**2016**	**2015**	**2016 vs. 2015**	**2016 vs. 2015**
Net sales	4,377	4,465	$ (88)	(2.0)%
Segment income	707	673	$ 34	5.1 %

2016 vs. 2015

Performance Coatings net sales decreased (-2%) due to the following:

- *Unfavorable foreign currency translation of approximately $144 million (-3%)*
- *Lower sales volumes (-1%)*

Partially offset by:

- *Net sales attributable to acquired businesses (+1%)*
- *Higher selling prices (+1%)*

Architectural coatings - EMEA sales volumes improved by a low-single-digit percentage year-over-year, led by growth in western Europe early in the year.

Architectural coatings - Americas and Asia Pacific organic net sales decreased a low single digit percentage in the first six months versus the prior year. In the U.S. and Canada, modest company owned store year-over-year growth was more than offset by declines in the independent dealer and national retailer channels. Local currency sales growth in Mexico grew at approximately double the Mexican GDP due to continued market penetration and over 100 new store openings year-to-date.

Protective and marine coatings net sales volumes were modestly higher year-over-year as growth in protective coatings was offset by declines in marine coatings, primarily due to lower new ship builds and the ongoing impact of decreased capital investment and maintenance in the oil and gas sector. Protective coatings sales volumes grew versus the prior year, led by the U.S., Asia Pacific and Latin America, including benefits from expanded distribution through the Comex concessionaire network.

Aerospace coatings sales volumes increased modestly versus the prior year despite lower commercial demand stemming from continuing customer inventory management. Regionally, Asian and European sales growth was largely offset by declines in the U.S. and Canada.

Automotive refinish coatings organic sales grew at a mid-single-digit percentage rate year-over-year, outperforming end-use market demand levels in the U.S. and Canada and Asia Pacific.

Segment income increased $34 million (+5%) year-over-year despite the impact of approximately $15 million of planned incremental costs for new product launches and other growth-related initiatives in major U.S. architectural coatings national accounts. The increase in segment income was primarily due to acquisition-related income and continued strong cost management, including additional business restructuring benefits. Unfavorable foreign currency translation reduced segment income by nearly $20 million.

Industrial Coatings

($ in millions, except per share amounts)	Six Months Ended June 30		$ Change	% Change
	2016	2015	2016 vs. 2015	2016 vs. 2015
Net sales	2,816	2,751	$ 65	2.4%
Segment income	557	504	$ 53	10.5%

2016 vs. 2015

Industrial Coatings segment net sales increased (+2%) due to the following:

- *Net sales attributable to acquired businesses (+4%)*
- *Higher sales volumes (+2%), led by growth in Europe.*

Partially offset by:

- *Unfavorable foreign currency translation of approximately $80 million (-3%)*
- *Lower selling prices (-1%)*

PPG’s global automotive OEM coatings business sales volumes were consistent with the prior year, reflecting modest global automotive industry production growth. PPG's sales volumes differed by region, with year-over-year growth tempered in Asia-Pacific given the prior year double-digit percentage growth.

Global industrial coatings and specialty coatings and materials sales volumes, in aggregate, increased a low-to-mid-single-digit percentage year-over-year, as growth momentum continued. Sales volumes remained uneven by end-use market and geography. Regionally, European sales volumes continued to expand, Asia sales volumes increased, while the U.S. and Canada experienced negative growth rates. Sales volumes in Latin America were flat.

Global packaging coatings sales volumes were up a mid-to-high single-digit percentage year-over-year, with at least mid-single digit percentage growth in all regions, driven primarily by continued strong sales growth momentum for new can coatings technologies.

Segment income increased $53 million (+10.5%) primarily due to lower manufacturing costs, including business restructuring benefits, higher sales volumes and acquisition-related income, partially offset by unfavorable foreign currency translation ($11 million).

Glass

($ in millions, except per share amounts)	Six Months Ended June 30 2016	2015	$ Change 2016 vs. 2015	% Change 2016 vs. 2015
Net sales	543	546	$ (3)	(0.5)%
Segment income	71	67	$ 4	6.0 %

2016 vs. 2015

Glass segment net sales decreased (-0.5%) due to the following:

- *Lower sales volumes (-1%)*
- *Lower sales stemming from a prior year flat glass production facility divestiture (-1%)*
- *Unfavorable foreign currency translation (-1%)*

Partially offset by:

- *Higher selling prices (+2%)*

Flat glass sales volumes decreased by a low-single digit percentage reflecting the impact of a scheduled facility outage at the company's Fresno, California facility during the six-months ended. Sales were also lower year-over-year due to the prior year sale of remaining finished goods from a previously divested flat glass manufacturing facility. Despite the lower sales volumes, underlying flat glass end-use market demand remained solid. Selling prices improved year-over-year.

Fiber glass sales volumes declined modestly year-over-year, as higher demand for automotive and wind energy components in Europe was offset by lower demand in certain U.S. energy-related end-use markets. Selling prices were flat year over year.

Segment income increased $4 million (6%) due to lower sales volumes, $12 million of repair-related costs for the scheduled Fresno facility outage and lower equity earnings, driven by weaker consumer electronics demand in Asia, partially offset by disciplined cost management.

Liquidity and Capital Resources

PPG had cash and short-term investments totaling approximately $1.7 billion and $1.5 billion at June 30, 2016 and December 31, 2015 , respectively.

Cash used for operating activities - continuing operations for the six months ended June 30, 2016 was $25 million . Cash from operating activities - continuing operations was $186 million for the six months ended June 30, 2015 . Operating cash flow compared with prior year decreased primarily due to funding of the asbestos settlement trust ($813 million) and higher cash tax payments ($27 million) partially offset by lower working capital ($376 million) and lower pension contributions ($270 million).

Other uses of cash during the six months ended June 30, 2016 included:

- Capital expenditures, excluding acquisitions, of $168 million , or about 2% of sales.
- Mandatory contributions to PPG's non-U.S. pension plans of $13 million.
- Cash dividends paid totaled $203 million .
- Cash spent on share repurchases totaled $150 million .

In May 2016, PPG entered into two $250 million Term Loan Credit Agreements. One term loan agreement is with the Bank of Tokyo-Mitsubishi UFJ, Ltd. (the "BTM Term Loan") under which the Company has borrowed $250 million . The second term loan credit agreement is with BNP Paribas (the "BNP Term Loan") under which the Company has borrowed $250 million . The BTM Term Loan terminates and all amounts outstanding are payable on March 30, 2017. The BNP Term Loan terminates and all amounts outstanding are payable on May 26, 2017.

In January 2016, PPG's $250 million 1.9% notes matured, and PPG repaid these notes with cash on hand.

In 2016, PPG changed the method it uses to estimate the service and interest cost components of net periodic benefit cost for pension and other postretirement benefit costs for substantially all of its U.S. and foreign plans. Historically, the service and interest cost components were estimated using a single weighted-average discount rate derived from the yield curve used to measure the projected benefit obligation at the beginning of the period. PPG has elected to use a full yield curve approach ("Split-rate") to estimate these components of benefit cost by applying specific spot rates along the yield curve used to determine the benefit obligation to the relevant projected cash flows. PPG made

this change to improve the correlation between projected benefit cash flows and the corresponding yield curve spot rates and to provide a more precise measurement of service and interest costs. This change does not affect the measurement of the Company's total benefit obligations. PPG accounted for this change as a change in estimate and, accordingly, is recognizing its effect prospectively beginning in fiscal year 2016.

On April 16, 2015, the PPG Board of Directors approved a 2-for-1 split of the Company's common stock for all shareholders. The record date for the split was the close of business on May 11, 2015 and the additional shares were distributed on June 12, 2015. Each shareholder as of the date of record received one additional share of common stock for each share held. Historical per share and share data in this Form 10-Q give retroactive effect to the stock split. These adjustments had no impact on our previously reported net income, total assets, cash flows or shareholders' equity.

Total capital spending in 2016 is expected to be in the range of 3.0% to 3.5% of full year sales. Also, PPG expects to make mandatory contributions to its non-U.S. pension plans in the range of $20 million to $25 million in the remainder of 2016.

We believe that our cash on hand and short term investments, cash from operations and the Company's available borrowing capacity will continue to be sufficient to fund operating activities, capital spending, including acquisitions, dividend payments, debt service, share repurchases and contributions to pension plans. We intend to deploy our cash in a timely, disciplined manner with a continued emphasis on incremental earnings accretive initiatives, including additional acquisitions and share repurchases. The Company expects to deploy cash for business acquisitions and share repurchases of between $2 billion and $2.5 billion for years 2015 and 2016 combined. To date, we have deployed cash of approximately $1.6 billion, including the MetoKote acquisition which closed on July 1, 2016.

PPG's total debt to equity ratio (total debt, including capital leases, to total debt and PPG shareholders' equity) was 49% at June 30, 2016 and 46% at December 31, 2015 .

Operating Working Capital is a subset of total working capital and represents (1) trade receivables – net of the allowance for doubtful accounts, (2) inventories and (3) trade liabilities. We believe Operating Working Capital represents the key components of working capital under the operating control of our businesses. A key metric we use to measure improvement in our working capital management is Operating Working Capital as a percentage of sales (current quarter sales annualized).

($ in millions, except percentages)	June 30, 2016 (a)	December 31, 2015	June 30, 2015
Trade Receivables, Net	$ 2,779	$ 2,413	$ 2,912
Inventories, FIFO	1,943	1,868	2,036
Trade Creditors' Liabilities	2,118	1,940	2,036
Operating Working Capital	$ 2,604	$ 2,341	$ 2,912
Operating Working Capital as a % of Sales	16.0%	15.8%	17.8%

(a) Reclassifications for Assets and Liabilities held for sale related to the European fiber glass business reduced Operating Working Capital by $14 million as of June 30, 2016. Excluding the impact of the reclassifications on the balance sheet, operating working capital was $2,618 million, or 16.1% of sales.

Days sales outstanding at June 30, 2016 was 56 days, as reported, up from 54 days as of December 31, 2015 . Day sales outstanding as of June 30, 2015 was 58 days.

Other Liquidity Information

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2016	2015	2016	2015
Cash outlays for environmental remediation activities	$ 9	$ 20	$ 23	$ 56

($ in millions)	Remainder of 2016	Annually 2017 - 2019
Projected future cash outlays for environmental remediation activities	$10 - $25	$25 - $45

On July 20, 2016, PPG signed a definitive agreement to sell the assets of its flat glass manufacturing and glass coatings operations to Vitro S.A.B. de C.V., a leading producer of flat glass and specialty products. The transaction is expected to close by the end of 2016, subject to customary closing conditions. PPG will receive approximately $750 million in

gross cash proceeds. PPG will report the assets and liabilities of the flat glass business as "Assets held for sale" and "Liabilities held for sale" on the condensed consolidated balance sheet and the results of operations of the flat glass business as discontinued operations on the condensed consolidated statements of income and cash flows beginning in the third quarter 2016.

On June 20, 2016, PPG announced that it has signed an agreement for the sale of its European fiber glass operations to glass manufacturer Nippon Electric Glass Co. Ltd. ("NEG"). The transaction is subject to completion of employee consultation processes, receipt of regulatory clearances and other customary closing conditions. PPG and NEG expect to close the transaction in the second half of 2016.

On June 9, 2016, PPG fully funded its portion of the Pittsburgh Corning asbestos settlement trust ("Trust") that was established by the U.S. Bankruptcy Court for the Western District of Pennsylvania in May 2016. The obligations included cash funding of $506 million (pre-tax) and the transfer of about 2.78 million shares of PPG common stock, which were hedged at approximately $22 per share. These shares were already included in the company's outstanding diluted share count. Lastly, PPG relinquished any claim to its equity interest in Pittsburgh Corning and conveyed to the Trust its ownership interest in Pittsburgh Corning's European subsidiary. In addition to the initial funding obligation, the company exercised an option to prepay all future cash obligations, totaling a net of $258 million (pre-tax), including a 5.5 percent prepayment discount of $61 million. All payments were applied against a previously established PPG reserve for the total asbestos-trust obligation. The company utilized cash on hand for the payments, and this funding will have no impact on PPG's previously stated cash-deployment targets. Refer to Note 15, "Commitments and Contingent Liabilities" under Item 1 of this Form 10-Q for additional information. The funding of the Trust is expected to lower PPG's 2016 full year current tax liability by approximately $300 million, contemplating the 2016 sale of the flat glass business and absent other future changes to taxable income.

In conjunction with the 2013 separation of its commodity chemicals business, PPG conveyed to Axiall Corporation ("Axiall") its 60% ownership interest in Taiwan Chlorine Industries ("TCI"), a joint venture with China Petrochemical Development Corporation ("CPDC") located in Taiwan. Under PPG's agreement with CPDC, if certain post-closing conditions were not met following the 3 year anniversary of the separation, CPDC had the option to sell its 40% ownership interest in TCI to Axiall for $100 million. In turn, Axiall had a right to designate PPG as its designee to purchase the 40% ownership interest of CPDC. On April 22, 2016, Axiall announced that CPDC had decided to sell its ownership interest in TCI to Axiall. On June 19, 2016, Axiall formally designated PPG to purchase the 40% ownership interest in TCI. PPG is evaluating its options regarding CPDC's exercise of the put and Axiall's subsequent designation of PPG to purchase the 40% ownership interest.

Pension Annuity Contracts

On June 24, 2016, the Company entered into (a) a Definitive Purchase Agreement by and among the Company, Massachusetts Mutual Life Insurance Company ("MassMutual") and State Street Bank & Trust Company ("State Street"), as independent fiduciary to the Company's United States defined benefit pension plans (the "Plans"), and (b) a Definitive Purchase Agreement by and among the Company, Metropolitan Life Insurance Company ("MetLife") and State Street, pursuant to which the Plans will purchase group annuity contracts that will irrevocably transfer to the two insurance companies the future pension benefit obligations for approximately 13,200 of the Company's retirees in the United States who started receiving their monthly retirement benefit payments on or before April 1, 2016.

Upon issuance of the group annuity contracts, the value of the benefit obligation of each affected former salaried employee's retirement benefit obligation will be irrevocably guaranteed by, and split equally between, MassMutual and MetLife. Pursuant to these Definitive Purchase Agreements, MassMutual will serve as the lead administrator and, beginning September 1, 2016, it will make each former salaried employee's full annuity payment on behalf of itself and MetLife. The value of the benefit obligation of each affected former hourly employee's retirement benefit obligation will be irrevocably guaranteed by MetLife, and MetLife will serve as the administrator. Beginning September 1, 2016, MetLife will make each former hourly employee's full annuity payment.

The amount of each affected retiree's annuity payment will be equal to the amount of such individual's pension benefit. By irrevocably transferring the obligations to MassMutual and MetLife, the Company will reduce its overall pension projected benefit obligation by approximately $1.6 billion. The purchase of group annuity contracts will be funded directly by the assets of the Plans.

The Definitive Purchase Agreements each contain closing conditions customary for a transaction of this nature, including certain termination clauses. Assuming all closing conditions are satisfied, the Company expects the purchase of the irrevocable group annuity contracts would occur in the third quarter of 2016.

The Company expects to make an aggregate contribution of approximately $175 million to the Plans in 2016 and 2017. These contributions will be funded by cash on hand. The Company expects to recognize a non-cash pension settlement charge of approximately $500 to $600 million after-tax (approximately $800 million to $1.0 billion pre-tax) in the third quarter of 2016 resulting from of the purchase of the group annuity contracts.

Currency

Comparing exchange rates from December 31, 2015 to June 30, 2016 , the U.S. dollar weakened against most of the currencies in the countries in which PPG operates, most notably the Euro. As a result, consolidated net assets at June 30, 2016 increased by $82 million, compared to December 31, 2015 . Comparing exchange rates during the first six months of 2016 to those of the first six months of 2015 , the U.S. dollar strengthened against the currencies of most countries in which PPG operates, most notably the Mexican Peso. This had an unfavorable impact on pre-tax income from continuing operations for the six months ended June 30, 2016 of $29 million from the translation of these foreign earnings into U.S. dollars.

New Accounting Standards

See Note 2 , " New Accounting Standards ," to the accompanying condensed consolidated financial statements for further details on recently issued accounting guidance.

Commitments and Contingent Liabilities, including Environmental Matters

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. See Part II, Item 1, "Legal Proceedings" of this Form 10-Q and Note 15 , " Commitments and Contingent Liabilities ," to the accompanying condensed consolidated financial statements for a description of certain of these lawsuits, including a description of the proposed asbestos settlement.

As discussed in Part II, Item 1 and Note 15 , although the result of any future litigation of such lawsuits and claims is inherently unpredictable, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims, will not have a material effect on PPG's consolidated financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

As also discussed in Note 15 , PPG has significant reserves for environmental contingencies. Please refer to the Environmental Matters section of Note 15 for details of these reserves. A significant portion of our reserves for environmental contingencies relate to ongoing remediation at PPG's former chromium manufacturing plant in Jersey City, N.J. and associated sites ("New Jersey Chrome"). The Company continues to analyze, assess and remediate the environmental issues associated with New Jersey Chrome. Information will continue to be generated from the ongoing groundwater remedial investigation activities related to New Jersey Chrome and will be incorporated into a final draft remedial action work plan for groundwater expected to be submitted to the New Jersey Department of Environmental Protection in 2020.

It is possible that technological, regulatory and enforcement developments, the results of environmental studies and other factors could alter the Company's expectations with respect to future charges against income and future cash outlays. Specifically, the level of expected future remediation costs and cash outlays is highly dependent upon activity related to New Jersey Chrome.

Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 provides a safe harbor for forward-looking statements made by or on behalf of the Company. Management's Discussion and Analysis and other sections of this Annual Report contain forward-looking statements that reflect the Company's current views with respect to future events and financial performance.You can identify forward-looking statements by the fact that they do not relate strictly to current or historic facts. Forward-looking statements are identified by the use of the words "aim," "believe," "expect," "anticipate," "intend," "estimate," "project," "outlook," "forecast" and other expressions that indicate future events and trends. Any forward-looking statement speaks only as of the date on which such statement is made, and the Company undertakes no obligation to update any forward looking statement, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our reports to the Securities and Exchange Commission. Also, note the following cautionary statements.

Many factors could cause actual results to differ materially from the Company's forward-looking statements. Such factors include global economic conditions, increasing price and product competition by foreign and domestic competitors, fluctuations in cost and availability of raw materials, the ability to maintain favorable supplier relationships and arrangements, the timing of and the realization of anticipated cost savings from restructuring initiatives, difficulties

in integrating acquired businesses and achieving expected synergies therefrom, economic and political conditions in international markets, the ability to penetrate existing, developing and emerging foreign and domestic markets, foreign exchange rates and fluctuations in such rates, fluctuations in tax rates, the impact of future legislation, the impact of environmental regulations, unexpected business disruptions and the unpredictability of existing and possible future litigation. However, it is not possible to predict or identify all such factors.

Consequently, while the list of factors presented here and in the Company's Form 10-K for the year ended December 31, 2015 under the caption "Item 1A Risk Factors" are considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements.

Consequences of material differences in the results compared with those anticipated in the forward-looking statements could include, among other things, lower sales or earnings, business disruption, operational problems, financial loss, legal liability to third parties, other factors set forth in "Item 1A. Risk Factors" of the Company's Form 10-K for the year ended December 31, 2015 and similar risks, any of which could have a material adverse effect on the Company's consolidated financial condition, results of operations or liquidity.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

As of June 30, 2016 , PPG had non-U.S. dollar denominated borrowings outstanding of $2.3 billion. As of December 31, 2015 , PPG had non-U.S. dollar denominated borrowings outstanding of $2.1 billion. A weakening of the U.S. dollar by 10% against European currencies and by 20% against Asian and South American currencies would have resulted in unrealized translation losses on these borrowings of approximately $285 million and $242 million as of June 30, 2016 and December 31, 2015 , respectively.

There were no other material changes in the Company's exposure to market risk from December 31, 2015 to June 30, 2016 . See Note 13 , " Financial Instruments, Hedging Activities and Fair Value Measurements " for a description of our instruments subject to market risk.

Item 4. Controls and Procedures

a. Evaluation of disclosure controls and procedures. Based on their evaluation as of the end of the period covered by this Form 10-Q, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure.

b. Changes in internal control. There were no changes in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. These lawsuits and claims may relate to contract, patent, environmental, product liability, antitrust and other matters arising out of the conduct of PPG's current and past business activities. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage in the future. PPG's lawsuits and claims against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The results of any future litigation and claims are inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims, will not have a material effect on PPG's consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

For many years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. For a description of asbestos litigation affecting the Company and the terms and status of the asbestos settlement arrangement, see Note 15 , " Commitments and Contingent Liabilities " to the accompanying condensed consolidated financial statements under Part I, Item 1 of this Form 10-Q.

In the past, the Company and others have been named as defendants in several cases in various jurisdictions claiming damages related to exposure to lead and remediation of lead-based coatings applications. PPG has been dismissed as a defendant from most of these lawsuits and has never been found liable in any of these cases.

In March 2016, the Natural Resource Trustees for the Calcasieu River Estuary (Louisiana Department of Environmental Quality, The United States Environmental Protection Agency and the United States Department of the Interior) reached an agreement in principle with PPG and two other potentially responsible parties to resolve the Trustees' claims for natural resource damages alleged to have been caused by the release of hazardous substances into the Estuary. PPG's share of this settlement is $3,600,000.

In July 2013, the EPA issued to PPG a Notice of Violation ("NOV") alleging that the Company's Barberton, Ohio facility violated certain air emission regulatory requirements of the federal Clean Air Act. In February 2015, the EPA issued a second NOV to the Company alleging that the Company's Barberton facility had failed to submit certain information requested by the EPA and that the facility exceeded certain air emission limits contained in the facility's air emission permit. In June 2016, PPG and the EPA entered into a Consent Agreement and Final Order for the resolution of this matter which included a stipulated civil penalty of $137,500.

In December 2011, the United States Environmental Protection Agency ("EPA") issued a Finding of Violation alleging that PPG's Delaware, Ohio facility violated certain leak detection and repair ("LDAR") requirements of the federal Clean Air Act. PPG and the EPA have reached an agreement in principle to settle this matter with a total civil penalty of $225,000 and certain enhancements to the facility's LDAR program PPG and the EPA are in the process of finalizing the terms of a Consent Decree for this matter which will memorialize the terms of this settlement.

Item 1A. Risk Factors

There were no material changes in the Company's risk factors from the risks disclosed in the Company's Form 10-K for the year ended December 31, 2015 .

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Directors who are not also officers of the Company receive common stock equivalents pursuant to the PPG Industries, Inc. Deferred Compensation Plan for Directors ("PPG Deferred Compensation Plan for Directors"). Common stock equivalents are hypothetical shares of common stock having a value on any given date equal to the value of a share of common stock. Common stock equivalents earn dividend equivalents that are converted into additional common stock equivalents but carry no voting rights or other rights afforded to a holder of common stock. The common stock equivalents credited to directors under both plans are exempt from registration under Section 4(a)(2) of the Securities Act of 1933 as private offerings made only to directors of the Company in accordance with the provisions of the plans.

Under the PPG Deferred Compensation Plan for Directors, each director may elect to defer the receipt of all or any portion of the compensation paid to such director for serving as a PPG director. All deferred payments are held in the form of common stock equivalents. Payments out of the deferred accounts are made in the form of common stock of the Company (and cash as to any fractional common stock equivalent). In the second quarter of 2016 , the directors,

as a group, were credited with 7,553 common stock equivalents under this plan. The value of each common stock equivalent, when credited, ranged from $109.24 to $116.07.

Issuer Purchases of Equity Securities

No shares were repurchased in the quarter ended June 30, 2016 under the current $2 billion share repurchase program approved in April 2014. The maximum number of shares that may yet be purchased under this program is 7,392,432 shares. This repurchase program has no expiration date.

Item 6. Exhibits

See the Index to Exhibits on Page 49.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

PPG INDUSTRIES, INC.
(Registrant)

Date: July 22, 2016

By: /s/ Frank S. Sklarsky
Frank S. Sklarsky
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer and Duly Authorized Officer)

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Index to Exhibits

The following exhibits are filed as part of, or incorporated by reference into, this Form 10-Q.

†2.1	Definitive Purchase Agreement, dated as of June 24, 2016, by and among Massachusetts Mutual Life Insurance Company, PPG Industries, Inc. and State Street Bank and Trust Company, as Independent Fiduciary of the PPG Industries, Inc. Pension Plans.
†2.2	Definitive Purchase Agreement, dated as of June 24, 2016, by and among Metropolitan Life Insurance Company, PPG Industries, Inc. and State Street Bank and Trust Company, as Independent Fiduciary of the PPG Industries, Inc. Pension Plans.
10.3	Term Loan Credit Agreement, dated May 27, 2016, between PPG Industries, Inc. and The Bank of Tokyo-Mitsubishi UFJ, Ltd. was filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on June 3, 2016.
10.4	Term Loan Agreement, dated May 27, 2016, among PPG Industries, Inc., BNP Paribas, as administrative agent for the lenders, and BNP Paribas Securities Corp., as sole lead arranger, was filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on June 3, 2016.
††12	Computation of Ratio of Earnings to Fixed Charges for the Six Months Ended June 30, 2016 and for the Five Years Ended December 31, 2015.
††31.1	Certification of Principal Executive Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
††31.2	Certification of Principal Financial Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
†††32.1	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
†††32.2	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

† Filed herewith. Confidential treatment has been requested for portions of this agreement. Schedules and exhibits to this agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule or exhibit will be furnished supplementally to the Securities and Exchange Commission on request.

†† Filed herewith.

††† Furnished herewith.

* Attached as Exhibit 101 to this report are the following documents formatted in XBRL (Extensible Business Reporting Language): (i) the Condensed Consolidated Statement of Income for the three and six months ended June 30, 2016 and 2015, (ii) the Condensed Consolidated Balance Sheet at June 30, 2016 and December 31, 2015, (iii) the Condensed Consolidated Statement of Cash Flows for the six months ended June 30, 2016 and 2015, and (iv) Notes to Condensed Consolidated Financial Statements for the three and six months ended June 30, 2016.

EXHIBIT 2.1

DEFINITIVE PURCHASE AGREEMENT

BY AND AMONG

PPG INDUSTRIES, INC.,

STATE STREET BANK AND TRUST COMPANY AND

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

CONFIDENTIAL MATERIAL REDACTED AND SEPARATELY FILED WITH THE COMMISSION

CONFIDENTIAL TREATMENT REQUESTED BY PPG INDUSTRIES, INC.

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DEFINITIVE PURCHASE AGREEMENT

This Definitive Purchase Agreement (this " Agreement ") is entered into as of June 24, 2016 (the " Signing Date ") by and among Massachusetts Mutual Life Insurance Company, a Commonwealth of Massachusetts life insurance company (" Insurer "), PPG Industries, Inc., a Pennsylvania corporation (" Company "), acting solely in a non-fiduciary capacity as the sponsor of the PPG Industries, Inc. Retirement Plan A, the PPG Industries, Inc. Retirement Plan B, the PPG Industries, Inc. Retirement Plan C, the PPG Industries, Inc. Retirement Plan E and the PPG Industries, Inc. Retirement Plan F (the " Plans "), and State Street Bank and Trust Company, a Massachusetts trust company, for the purposes of this Agreement, acting through State Street Global Advisors, a division of State Street Bank and Trust Company, solely in its capacity as the independent fiduciary of the Plans with certain authority and responsibility to represent the Plans and their Plan Participants and Plan Beneficiaries in regard to the Transactions (" Independent Fiduciary "). Insurer, Company and Independent Fiduciary are referred to collectively in this Agreement as the " Parties ."

RECITALS

A. Company, as sponsor of the Plans, has amended the Plans to require that Liabilities under the Plans for certain participants currently receiving benefits under the Plans be transferred to a licensed insurance company, and that such insurance company fully and irrevocably guarantee benefits in accordance with one or more group annuity contracts.

B. In furtherance of the foregoing, Insurer wishes to issue to Company the Group Annuity Contract on the terms and subject to the conditions set forth in this Agreement and in the Group Annuity Contract.

C. Company and Independent Fiduciary desire to proceed with the Plans' purchase and Company's receipt of the Group Annuity Contract from Insurer.

D. Independent Fiduciary has determined that the Plans' purchase of the Group Annuity Contract as provided for in, and subject to the terms of, this Agreement satisfies the ERISA Requirements.

E. The Parties wish to enter into this Agreement to provide for the purchase and the issuance of the Group Annuity Contract by Insurer to Company and certain related transactions and agreements, including Insurer and Other Insurer entering into the Administrative Service Agreement.

F. Company is entering into this Agreement and the Ancillary Agreements to which it is a party, and undertaking the actions contemplated by each, solely in a non-fiduciary capacity as sponsor of the Plans.

G. Independent Fiduciary is entering into this Agreement and the Ancillary Agreements to which it is a party, and undertaking the actions contemplated by each, solely in its capacity as a named fiduciary for purposes of the selection of an insurance company, the negotiation of the terms

of the Group Annuity Contract and the negotiation of the terms of this Agreement and the Ancillary Agreements to which it is a party.

H. Contemporaneously with the execution of this Agreement, Independent Fiduciary, Plan Trustee and Insurer have entered into the Plan Trustee Agreement (the " Plan Trustee Agreement ") and delivered a duly executed copy of such agreement to Company.

NOW, THEREFORE, in consideration of the mutual promises made in this Agreement, and in consideration of the representations, warranties and covenants contained in this Agreement, the Parties agree as follows:

CONFIDENTIAL MATERIAL REDACTED AND SEPARATELY FILED WITH THE COMMISSION

ARTICLE I
DEFINITIONS AND INTERPRETATION

1.1 Definitions. For purposes of this Agreement:

[* * *]

" Action " means any claim, action, suit, arbitration, complaint, charge, investigation, inquiry or proceeding by or before any Governmental Authority.

[* * *]

" Administrative Services Agreement " means the Administrative Services Agreement between Insurer and Other Insurer in substantially the same form as Schedule 1.1(b).

" Affiliate " of any particular Person means any other Person controlling, controlled by or under common control with such particular Person. For the purposes of this definition, "controlling," "controlled" and "control" means the possession, directly or indirectly, of the power to direct the management and policies of a Person whether through the ownership of voting securities, Contract or otherwise.

" Agreement " is defined in the preamble.

" Alternative Arrangement " is defined in Section 6.4(c).

" Alternative Transaction Proposal " means any proposal or offer relating to the entry into an insurance, reinsurance or other transaction similar to the purchase and issuance of the Group Annuity Contract contemplated by this Agreement that would be reasonably likely to replace, frustrate or cause not to occur the Transactions in respect of the Covered Lives or Contingent Lives, including any transaction in which the responsibility to make all or any substantial portion of the payments in respect of pension obligations owed to the Covered Lives or Contingent Lives would be transferred, assigned or novated from the Plan Trust to a non-affiliated Person or in which a non-affiliated Person would assume an obligation to indemnify or reimburse the Plan Trust, Company or any of their respective Affiliates for any such payment. An "Alternative Transaction Proposal" will not, however, include (a) any insurance, reinsurance or other transaction that does not relate to the Covered Lives, Contingent Lives or Beneficiaries or (b) the Other Group Annuity Contracts and any definitive purchase agreement executed by Other Insurer, Company and Independent Fiduciary with respect to the Other Group Annuity Contracts (but only to the extent that the Other Group Annuity Contracts and such definitive purchase agreement are not intended to replace any part of the Group Annuity Contract or this Agreement).

" Ancillary Agreements " means the Group Annuity Contract, Administrative Services Agreement, [* * *], Bill of Sale, Plan Trustee Direction Letter, Plan Trustee Agreement and all other written agreements, documents or certificates to be delivered by a Party at the Closing.

" Annuity Benefits Correspondence Center " is defined in Section 7.3(a).

CONFIDENTIAL MATERIAL REDACTED AND SEPARATELY FILED WITH THE COMMISSION

" Annuity Certificate " means an annuity certificate evidencing coverage under the Group Annuity Contract, substantially in the applicable form attached as Schedule 1.1(c) , with such modifications as may be made by Insurer as necessary to satisfy the requirements of applicable Law.

" Annuity Commencement Date " means [* * *].

" Annuity Exhibits " means the annuity exhibits attached to the Group Annuity Contract, in substantially the same form attached to Schedule 1.1(d) , as amended and supplemented pursuant to the Group Annuity Contract.

" Annuity Payment " has the meaning ascribed to such term in the Group Annuity Contract.

" ASC 715 " means Accounting Standards Codification Section 715: Compensation-Retirement Benefits.

[* * *]

" Asset Portfolio " means [* * *], as adjusted from time to time pursuant to Section 2.5 .

[* * *] is defined in Section 2.17 .

" Base Annuity Premium " is defined in the "0 REFERENCE_WORKSHEET" Tab of the Workbook.

" Base File " means the data as of April 13, 2016, in the file titled [* * *] that was provided by Company to Insurer in the Data Room on [* * *].

" Beneficiary " has the meaning ascribed to such term in the Group Annuity Contract.

" Bill of Sale " means the bill of sale in the form attached as Schedule 1.1(e) .

" Business Day " means any weekday on which banks in New York City, New York are open for business.

" Cash " means currency of the United States of America or wire transfers thereof that is legal tender for payment of all public and private debts.

" Closing " is defined in Section 2.2(a) .

" Closing Annuity Exhibits " is defined in Section 2.6(a)(iii) .

" Closing Data Cut-Off Date " means the day that is 22 Business Days prior to the Target Closing Date.

" Closing Data File " is defined in Section 2.6(a)(i) .

" Closing Date " is defined in Section 2.2(a) .

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[* * *]

" Closing Date Asset Portfolio Full Market Value " is defined in Section 2.6(b) .

" Closing Date Cash Amount " is defined in Section 2.6(e)(i) .

" Closing [* * *] Amount " means [* * *].

" Closing [* * *] Amount " means [* * *].

" Code " means the Internal Revenue Code of 1986, as amended, and the applicable Treasury Regulations issued thereunder.

" Commercially Reasonable Efforts " means, with respect to the efforts to be expended by a Party with respect to any objective under this Agreement, reasonable, diligent, good faith efforts to accomplish such objective as a similarly situated Person would normally use to accomplish a similar objective as expeditiously as reasonably possible under similar circumstances exercising reasonable business judgment. Notwithstanding the foregoing, "Commercially Reasonable Efforts" will not require a Person to make payments to unaffiliated third parties (other than in respect of the fees and expenses of such Person's counsel and other advisors), to incur non-de minimis Liabilities to unaffiliated third parties or to grant any non-de minimis concessions or accommodations.

" Committee " means Company's Benefits Investment Committee.

" Company " is defined in the preamble.

" Company Disclosure Letter " means the disclosure letter (containing all of the schedules of Company contemplated in this Agreement) as delivered by Company to the other Parties immediately prior to the execution of this Agreement.

" Company Provided Component " means any component incorporated into the calculation of the Closing Date Cash Amount and [* * *] (including the information provided pursuant to Section 2.17), including data necessary for the computation of the Closing [* * *] Amount, the Interim Post-Closing [* * *] Amount and the Final [* * *] Amount not calculated, determined or provided by Insurer.

" Company's Knowledge " means the actual knowledge of any officer of Company responsible for the day-to-day administration or oversight of the Plans or directly involved in the negotiation of this Agreement or the Transactions, in each case, after making appropriate inquiry of those people reporting directly to such officer who have substantial responsibility for the relevant subject matter and, if none of such officers or people reporting directly to them have substantial responsibility for the relevant subject matter, then after making appropriate inquiry of Company's officers with substantial responsibility for such subject matter.

" Compelled Disclosing Party " is defined in Section 11.14(d) .

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" Confidential Information " means all business and technical information or processes, stored in any medium, to the extent the same is reasonably construed or generally accepted as containing a trade secret, proprietary or confidential information of or belonging to any Party, its Representatives, its Affiliates or its Affiliates' Representatives, including know-how and trade secrets, customer or client requirements and lists, [* * *], technology, software and data processing procedures, insurance, actuarial, accounting and financial data, management systems, records and any other information that is designated as confidential and the portions of any reports or other documents prepared by any professional engaged in connection with this Agreement and any report or other document prepared by a receiving Party that contains or incorporates a trade secret, proprietary or confidential information of a disclosing Party. Confidential Information includes information communicated orally, in writing or in any other recorded or tangible form, information supplied by the disclosing Party and information delivered prior to the Signing Date pursuant to the Confidentiality Agreements. Information received by the receiving Party containing trade secrets or proprietary or confidential information constitutes Confidential Information.

" Confidentiality Agreements " means, collectively, (a) the confidentiality agreements, dated December 14, 2016 and June 9, 2016, between Company and Insurer and (b) the Confidentiality Agreement, dated March 14, 2016, between Company and Independent Fiduciary.

" Consent " means any consent, approval (or deemed approval after the expiry of all appropriate waiting periods), authorization, notice, filing, permission or waiver.

" Contingent Life " has the meaning ascribed to such term in the Group Annuity Contract.

" Contract " means any legally enforceable agreement, contract, commitment, instrument, undertaking, lease, note, mortgage, indenture, license or arrangement, whether written or oral.

" Contractholder " has the meaning ascribed to such term in the Group Annuity Contract.

" Covered Life " has the meaning ascribed to such term in the Group Annuity Contract.

" Credit Rating Agencies " means each of Standard & Poor's Rating Services, a division of The McGraw-Hill Companies, Inc., Moody's Investors Service, Inc. and Fitch Ratings Ltd., and their respective successors.

" Data Room " means Merrill Datasite virtual data room entitled "Project New Day.

" Deferred Closing Date " is defined in Section 2.2(b) .

" Dry-Run Asset Valuation " is defined in Section 2.7(a) .

" Dry-Run Calculation Delivery Date " means [* * *].

" Dry-Run Cash Payment Amount " is defined in Section 2.7(b)(i) .

" Dry-Run Date " means [* * *].

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" Dry-Run Date Cash Amount " means the amount equal to [* * *].

" Dry-Run [* * *] Amount " means [* * *].

" Dry-Run [* * *] Amount " means [* * *].

" Enforceability Exceptions " is defined in Section 3.2 .

" ERISA " means the Employee Retirement Income Security Act of 1974, as amended, and any federal agency regulations promulgated thereunder.

" ERISA Requirements " means the requirements of ERISA and guidance promulgated thereunder applicable to the Transactions, including Interpretive Bulletin 95-1.

[* * *]

[* * *] is defined in Section 2.13 .

" Final Annuity Exhibits " is defined in Section 2.9(b)(iii) .

" Final Data Cut-Off Date " means the day that is 111 Business Days after the Closing Date.

" Final Data File " is defined in Section 2.9(a) .

" Final [* * *] Amount " means [* * *] as defined in Section 2.9(a) .

" Final [* * *] Amount " is defined in Section 2.9(d)(i) .

" Final Post-Closing Date " means the day that is 133 Business Days after the Closing Date, but subject to the true-up payment of the Final [* * *] Amount in accordance with Section 2.9(e) .

" GAAP " means United States generally accepted accounting principles and practices in effect from time to time applied consistently throughout the periods involved.

" Governmental Approval " means any Consent of a Governmental Authority.

" Governmental Authority " means any federal, state, municipal, foreign or local government or quasi-governmental authority or any regulatory or administrative body, department, agency, insurance commission or commissioner, subdivision, court or other tribunal, arbitrator or arbitral body of any of the foregoing.

" Group Annuity Contract " means a single premium, non-participating group annuity contract, and all exhibits thereto, substantially in the form attached as Schedule 1.1(d).

" Group Annuity Contract Issuance " is defined in Section 2.1 .

" Identified USB Flash Drive " means the USB flash drive or any other delivery mechanic agreed to by the Parties containing, collectively, the Workbook and the Base File. Such USB Flash

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Drive will have been delivered by Insurer to Company on the Signing Date, or as promptly as practical thereafter.

" IF Engagement Letter " means the engagement letter, dated March 14, 2016, by and between the Committee and Independent Fiduciary.

" Indemnified Claims " is defined in Section 9.1 .

" Indemnified Party " is defined in Section 9.1 .

" Independent Fiduciary " is defined in the preamble.

" Independent Fiduciary MAC " means (a) the occurrence of a material adverse change, as determined in Independent Fiduciary's sole discretion, in or directly affecting Insurer or Other Insurer subsequent to the Signing Date that would cause the selection of Insurer or Other Insurer and the purchase of the Group Annuity Contract or the Other Group Annuity Contracts to fail to satisfy the ERISA Requirements or (b) the occurrence of a change in the ERISA Requirements after the Signing Date that would cause the selection of Insurer or Other Insurer and the Plans' purchase of the Group Annuity Contract or Other Group Annuity Contracts to fail to satisfy the ERISA Requirements.

" Insurer " is defined in the preamble.

" Insurer Provided Component " means any component incorporated into the calculation of the Closing Date Cash Amount and [* * *] (including the information provided pursuant to Section 2.17), including data necessary for the computation of the Closing [* * *] Amount, the Interim Post-Closing [* * *] Amount and the Final [* * *] Amount not calculated, determined or provided by Company.

" Insurer's Knowledge " means the actual knowledge of any officer of Insurer who will be responsible for the day-to-day administration of the Group Annuity Contract or was directly involved in the negotiation of this Agreement or the Transactions, in each case, after making appropriate inquiry of those people reporting directly to such officer who have substantial responsibility for the relevant subject matter and, if none of such officers or people reporting directly to them have substantial responsibility for the relevant subject matter, then after making appropriate inquiry of the officers of Insurer with substantial responsibility for such subject matter.

" Interim Post-Closing Annuity Exhibits " is defined in Section 2.8(b)(iii) .

" Interim Post-Closing Data Cut-Off Date " means the day that is 47 Business Days after the Closing Date.

" Interim Post-Closing Data File " is defined in Section 2.8(a) .

" Interim Post-Closing Date " means the day that is 71 Business Days after the Closing Date, but subject to the true-up payment of the Interim Post-Closing [* * *] Amount in accordance with Section 2.8(e) .

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" Interim Post-Closing [* * *] Amount " means [* * *] as defined in Section 2.8(a) .

" Interim Post-Closing [* * *] Amount " is defined in Section 2.8(d)(i) .

" Interpretive Bulletin 95-1 " means the U.S. Department of Labor's interpretive bulletin codified at 29 C.F.R. 2509.95-1.

" IP Materials " is defined in Section 11.16(a) .

" Law " means any federal, state, foreign or local law, statute, ordinance, regulation, rule or Order of any Governmental Authority.

" Liability " means any direct or indirect liability, debt, obligation, commitment, guaranty, claim, loss, damage, deficiency, penalty, fine, cost or expense of any kind, whether relating to payment, performance or otherwise, known or unknown, fixed, absolute or contingent, accrued or unaccrued, matured or unmatured, disputed or undisputed, liquidated or unliquidated, secured or unsecured, joint or several, due or to become due, vested or unvested, executory, determined, determinable or otherwise, whenever and however arising (including whether or not required to be reflected or reserved under GAAP on the financial statements of the obligor or responsible Person).

" Liens " means any lien, mortgage, security interest, pledge, deposit, encumbrance, restrictive covenant or other similar restriction.

" Material Litigation " means any Action that is initiated against Company, the Plans, Insurer or any fiduciary of the Plans (including Independent Fiduciary) by a Governmental Authority that seeks to enjoin the consummation of the Transactions or otherwise asserts that the Transactions violate applicable Law.

" PPG Benefits Center " is defined in Section 7.3(b) .

" Non-Exempt Prohibited Transaction " means a transaction prohibited by ERISA § 406 or Code § 4975, for which no statutory exemption or U.S. Department of Labor class exemption is available.

" Notice of Extension " is defined in Section 10.3(a) .

" Order " means any order, award, decision, injunction (preliminary or otherwise), judgment, ruling, decree, writ, subpoena or verdict entered, issued, made or rendered by any Governmental Authority or arbitrator.

" Other Group Annuity Contracts " means the group annuity contracts to be executed by Other Insurer and Company on the Closing Date with respect to the Priced Lives.

" Other Insurer " means Metropolitan Life Insurance Company, a New York life insurance company.

" Outside Date " is defined in Section 10.1(b) .

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" Parties " is defined in the preamble.

" Payment at Close " means (a) the assignment, transfer and delivery by Plan Trustee to Insurer of the Transferred Assets, and (b) the payment by Plan Trustee to Insurer of an amount in Cash equal to the Closing Date Cash Amount.

" Permitted Liens " means:

(a) Any Liens created by operation of Law in respect of restrictions on transfer of securities (other than restrictions relating to the transfer of the Transferred Assets at Closing, unless such transfer complies with such applicable Law); or

(b) Any transfer restrictions or other limitations on assignment, transfer or the alienability of rights under any indenture, debenture or other similar governing agreement to which such assets are subject (other than restrictions relating to the transfer of an asset at Closing, unless such transfer does not violate any such restriction).

" Person " means any individual, corporation, limited liability company, partnership, sole proprietorship, joint venture, trust, estate, association, organization, labor union, Governmental Authority or other entity.

" Plans " is defined in the preamble.

" Plan Asset " means an asset of the Plans within the meaning of ERISA.

" Plan Beneficiary " means a person designated (a) by a current or former Plan Participant, (b) by a domestic relations order that satisfies the qualification requirements in ERISA § 206(d)(3) and Code § 401(a)(13)(B) or (c) by the terms of the Plans to become entitled to receive a pension benefit from the Plans that is eligible pursuant to the Plans' terms to be provided through the Group Annuity Contract.

" Plan Governing Documents " means the Plans and any documents and instruments governing the Plans as contemplated under ERISA § 404(a)(1)(D).

" Plan Participant " means a person who is eligible to receive, and is receiving, a pension benefit from the Plans that is eligible pursuant to the Plans' terms to be provided through the Group Annuity Contract.

" Plan Representative " means the Person, other than Independent Fiduciary, designated by the Committee or its designee to perform the particular tasks described in this Agreement.

" Plan Trust " means the Amended and Restated Defined Benefit Plan Master Trust Agreement by and between Company and The Bank of New York Mellon effective June 30, 2015.

" Plan Trustee " means The Bank of New York Mellon, in its capacity as the directed trustee of the Plan Trust.

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" Plan Trustee Agreement " is defined in the recitals.

" Plan Trustee Direction Letter " means Independent Fiduciary's direction to Plan Trustee in substantially the form attached as Schedule 1.1(f) .

[* * *]

" Priced Lives " means all Plan Participants and Plan Beneficiaries who are referenced in [* * *].

[* * *]

" Projected RBC Ratio " means, as of a day of determination, the projection of the RBC Ratio as of December 31, 2015, as calculated under the method set forth on Schedule 5.13 .

" RBC Ratio " means the company action level risk-based capital ratio of Insurer, which will be calculated in a manner consistent with the requirements and methodologies prescribed under Massachusetts Law, as applied by Insurer in the ordinary course of its business, consistent with its historic practice.

" Representatives " means, in respect of any Person that is an entity, such Person's officers, directors, employees, advisors and agents.

" Re-Pricing Offer " is defined in Section 10.3(b) .

" SEC " means the Securities and Exchange Commission.

" Signing Date " is defined in the preamble.

" Target Closing Date " means (a) [* * *] or (b) such other date on or prior to the Outside Date that Insurer, Company and Independent Fiduciary may mutually agree.

" Tax Qualified " means qualified by the Code for preferential tax treatment under Code §§ 401(a) and 501(a).

[* * *]

[* * *]

" Transactions " means the transactions contemplated by this Agreement and the Ancillary Agreements, including any payment pursuant to Sections 2.8 and 2.9 .

" Transferred Assets " means the assets included on the Transferred Assets Schedule.

" Transferred Assets Schedule " means [* * *].

[* * *]

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" Uncovered Claim " is defined in Section 9.2(c) .

" Workbook " means the excel file titled [* * *] that was delivered by Insurer to Company in an email from [* * *] to [* * *] at [* * *] on [* * *] and confirmed by Company as final in an email from [* * *] to [* * *] at [* * *] on [* * *].

1.2 Interpretation .

(a) Whenever the words "include," "includes" or "including" are used in this Agreement they will be deemed to be followed by the words "without limitation." The use of "or" is not intended to be exclusive unless expressly indicated otherwise.

(b) Words denoting any gender will include all genders. The meanings given to terms defined in this Agreement will be equally applicable to both singular and plural forms of such terms. Where a word or phrase is defined in this Agreement, each of its other grammatical forms will have a corresponding meaning.

(c) The schedules, the Company Disclosure Letter, the Workbook, the Identified USB Flash Drive and the Base File are incorporated by reference and made a part of this Agreement as if set forth fully in this Agreement.

(d) A reference to any party to this Agreement or any other agreement or document will include such party's successors and permitted assigns.

(e) A reference to any Law or to any provision of any Law will include any amendment thereto, any modification or re-enactment thereof, any Law substituted therefor and all regulations issued thereunder or pursuant thereto.

(f) All references to "$" and dollars will refer to United States currency. All references to the word "days" will refer to calendar days unless otherwise specified in a particular case.

(g) All references to any financial or accounting terms will be defined in accordance with GAAP to the extent GAAP is applicable. However, with respect to any financial or accounting terms related to Insurer's accounting, the accounting terms will be in accordance with relevant state insurance statutory accounting principles (including applicable permitted practices).

(h) Reference to any agreement (including this Agreement), document or instrument means such agreement, document or instrument as amended or modified and in effect from time to time in accordance with its terms and, if applicable, this Agreement.

(i) The words "hereof," "herein" and "hereunder" and words of similar import when used in this Agreement will refer to this Agreement as a whole and not any particular provision of this Agreement, and section and schedule references relate to this Agreement unless otherwise specified.

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(j) Without limiting Section 11.16 , the Parties each acknowledge that (i) the Parties jointly and equally participated in the drafting of this Agreement and all other agreements contemplated by this Agreement, (ii) the Parties have each been adequately represented and advised by legal counsel with respect to this Agreement and the Transactions and (iii) no presumption will be made that any provision of this Agreement will be construed against any Party by reason of such role in the drafting of this Agreement and any other agreement contemplated by this Agreement.

(k) The table of contents and the headings of the articles and sections in this Agreement are inserted for convenience of reference only and are not intended to be a part of, or to affect the meaning or interpretation of, this Agreement.

(l) All capitalized terms not defined in the Company Disclosure Letter or any schedule will have the meanings ascribed to them in this Agreement. The representations and warranties of Company in this Agreement are made and given, and the covenants are agreed to, subject to the disclosures and exceptions in the Company Disclosure Letter. The disclosure of any matter in any section of the Company Disclosure Letter will be a disclosure for all purposes of this Agreement and all other sections of the Company Disclosure Letter to which such matter relates to the extent that the applicability of such matter to such other section of the Company Disclosure Letter is reasonably apparent on its face. The Company Disclosure Letter has been arranged in sections corresponding to the sections and paragraphs of this Agreement for the convenience of the Parties. The listing of any matter by Company in the Company Disclosure Letter will expressly not constitute an admission by Company, or to otherwise imply, that any such matter is material, is required to be disclosed under this Agreement or falls within relevant minimum thresholds or materiality standards in this Agreement. No disclosure in the Company Disclosure Letter relating to any possible breach or violation of any Contract or Law will be construed as an admission or indication that any such breach or violation exists or has actually occurred. The listing by Company of any matter in the Company Disclosure Letter will not expand the scope of Company's representations, warranties or covenants in this Agreement. All attachments to the Company Disclosure Letter are incorporated by reference into the Company Disclosure Letter in which they are directly or indirectly referenced. The information contained in the Company Disclosure Letter is in all events provided subject to the confidentiality restrictions in Section 11.14 .

ARTICLE II
PURCHASE OF SINGLE PREMIUM GROUP ANNUITY CONTRACT

2.1 Closing . At the Closing, (a) Independent Fiduciary will irrevocably direct Plan Trustee to make the Payment at Close, and (b) Insurer will issue and deliver to Company the Group Annuity Contract (the " Group Annuity Contract Issuance "). The Group Annuity Contract will be issued and delivered in Pennsylvania.

2.2 Time and Place of Closing .

(a) On the terms and subject to the conditions in this Agreement, the consummation of the Transactions, including the Payment at Close and the Group Annuity Contract Issuance (the " Closing ") will take place at the offices of K&L Gates, 210 Sixth Avenue, Pittsburgh, PA 15222-26131717 on (i) [* * *], if at least three Business Days prior to such date, all of the conditions in Article VIII have been satisfied or waived (except for those conditions that in

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accordance with their terms will be satisfied on the Closing Date) or (ii) at such other time, date and location as the Parties may agree in writing (the " Closing Date ").

(b) If the capital markets are in disarray or otherwise disrupted such that there is significant uncertainty regarding whether a true market value can be obtained with respect to all or a substantial portion of, the Transferred Assets, either Company or Insurer, no later than two Business Days prior to the Target Closing Date, may by written request to the other Party, setting forth the basis for its concerns regarding the capital markets, request that the Closing Date be deferred to a date later than the Closing Date, but in no event to a date later than the Outside Date. If the Party receiving the deferral request consents, which consent will not be unreasonably withheld, to the deferred Closing Date in writing delivered to the requesting Party, this Agreement will be deemed amended and the consented to Closing Date will be known as the " Deferred Closing Date " and the term "Deferred Closing Date" substituted for the term "Closing Date" wherever it appears in this Agreement.

2.3 Deliveries at Closing .

(a) At the Closing, Independent Fiduciary will, pursuant to Plan Trustee Direction Letter, irrevocably direct Plan Trustee to deliver to Insurer (with a copy to Company) the [* * *] and Bill of Sale, each duly executed by Plan Trustee, and Independent Fiduciary will deliver, or cause to be delivered, to Insurer and Company a certificate, dated as of the Closing Date, duly executed by an authorized officer of Independent Fiduciary certifying as to the satisfaction of the conditions specified in Sections 8.1(a) , 8.1(b) , 8.2(a) and 8.2(b) , in each case, as to Independent Fiduciary.

(b) At the Closing, Insurer will deliver to Company (and with respect to item (ii) will also deliver to Independent Fiduciary) the following duly executed documents and other items:

(i) The Group Annuity Contract (including all exhibits and attachments thereto), duly executed by Insurer;

(ii) A certificate, dated as of the Closing Date, duly executed by an authorized officer of Insurer certifying as to the satisfaction of the conditions specified in Sections 8.1(a) , 8.1(b) and 8.3(a) , in each case, as to Insurer;

(iii) The [* * *], duly executed by Insurer; and

(iv) The Bill of Sale, duly executed by Insurer.

(c) At the Closing, Company will deliver to Insurer (and with respect to item (ii) will also deliver to Independent Fiduciary, and with respect to the other items below, with a copy to Independent Fiduciary) the following duly executed documents:

(i) The Group Annuity Contract (including all exhibits and attachments thereto), duly executed by Company; and

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(ii) A certificate, dated as of the Closing Date, duly executed by an authorized officer of Company certifying as to the satisfaction of the conditions specified in Sections 8.2(a) , 8.2(b) and 8.3(a) , in each case, as to Company.

2.4 Allocation of Transferred Assets . Upon the Group Annuity Contract Issuance, Insurer will allocate the Transferred Assets transferred at Closing to the general account of Insurer.

2.5 [* * *]. [* * *]

2.6 Closing Date Calculations . As set forth in this Section 2.6 , Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to produce a calculation of the Closing Date Asset Portfolio Full Market Value and the Closing Date Cash Amount, with respect to the Group Annuity Contract, prior to the Closing Date to reconcile any adjustments to the Base Annuity Premium. [* * *]

(a) Closing Annuity Exhibits . In order for Insurer to create the annuity exhibits that will be attached to the Group Annuity Contract at Closing:

(i) On the day that is 18 Business Days prior to the Target Closing Date, Company will deliver to Insurer an updated data file in a form consistent with the Base File, except that such data file will include all corrections and changes to the data in the Base File identified by Company as of such date (the " Closing Data File "). On the 13 th Business Day prior to the Target Closing Date, Insurer will deliver to Company proposed Annuity Exhibits, which Insurer will have prepared using the Closing Data File.

(ii) As soon as reasonably practicable and in any event by the second Business Day following Insurer's delivery of such proposed Annuity Exhibits, Company will notify Insurer of any discrepancy between the proposed Annuity Exhibits and the Closing Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.10).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the tenth Business Day prior to the Target Closing Date and Insurer will reflect any agreed upon changes in the revised Annuity Exhibits (the " Closing Annuity Exhibits ").

(b) Closing Date Asset Portfolio Full Market Value . Independent Fiduciary will direct Plan Trustee to deliver to Insurer on the Business Day immediately prior to the Target Closing Date a calculation of the value of each asset on the Transferred Assets Schedule, calculated in accordance with the methodology in Schedule 2.6(b) , as of the close of business on the Business Day prior to the Closing (the aggregate amount of such valuations, the " Closing Date Asset Portfolio Full Market Value "). In the event of any discrepancy among the Parties with respect to the Closing Date Asset Portfolio Full Market Value is unable to be amicably reconciled, such discrepancy will be addressed in accordance with Section 2.10 .

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(c) Cash and Transferred Assets Exhibit . As early as practicable on the Closing Date (and prior to the Closing), Insurer will produce and deliver to Company a cash and transferred assets schedule, which will incorporate the Transferred Assets Schedule and the Closing Date Asset Portfolio Full Market Value and reflect the Closing Date Cash Amount. Insurer will attach such cash and transferred assets schedule as the " Cash and Transferred Assets Exhibit " to the Group Annuity Contract.

(d) [* * *]. Within three Business Days of receiving [* * *] from Plan Trustee and, with respect to the Dry-Run Calculation Delivery Date and the Closing Date, on the next day after Insurer receives [* * *], Insurer will deliver to Company the Workbook incorporating [* * *]. As soon as reasonably practicable and in any event within two Business Days following Insurer's delivery of the Workbook and, with respect to the Dry-Run Calculation Delivery Date and the Closing Date, on the same day as Insurer's delivery of the Workbook, Company will notify Insurer of any discrepancy between [* * *] and its records with respect to the information provided in [* * *]. Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, within two Business Days following Insurer's delivery of [* * *] and, with respect to the Dry-Run Calculation Delivery Date and the Closing Date, on the same day as Insurer's delivery of the Workbook.

(e) Closing Date Cash Amount . On the Closing Date (but prior to the Closing):

(i) Insurer will deliver to Company a calculation of the Closing Date Cash Amount. The "Closing Date Cash Amount" will be equal to [* * *]. Insurer will simultaneously deliver to Company a schedule in the form of the Workbook providing in reasonable detail all information supporting the calculation of the Closing Date Cash Amount.

(ii) Insurer will calculate the Closing Date Cash Amount using the data provided in accordance with Sections 2.6(a) and 2.6(c) .

2.7 Dry-Run Calculations . Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to produce a trial calculation of the Closing Date Cash Amount in order to agree on best practices for Closing Date procedures.

(a) Dry-Run Asset Valuation . Independent Fiduciary will direct Plan Trustee to deliver to Insurer on the Business Day immediately prior to the Dry-Run Calculation Delivery Date a calculation of the value of each asset in the Asset Portfolio, calculated in accordance with the methodology set forth in Schedule 2.6(b) as of the close of business on the Business Day immediately prior to the Dry-Run Calculation Delivery Date (the " Dry-Run Asset Valuation ").

(b) Dry-Run Cash Payment Amount . On the Dry-Run Calculation Delivery Date:

(i) Insurer will deliver to Company a calculation of the Dry-Run Cash Payment Amount. The " Dry-Run Cash Payment Amount " will be equal to [* * *].

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(ii) Insurer will calculate the Dry-Run Cash Payment Amount using the data provided by Company in the Closing Data File.

2.8 Calculation of Interim Post-Closing [* * *] Amount; Related True-Up . As set forth in this Section 2.8 , Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to produce an Interim Post-Closing [* * *] Amount calculation following the Closing Date to reconcile any adjustments to the Closing [* * *] Amount. [* * *]

(a) Interim Post-Closing Data File . On the 52 nd Business Day after the Closing, Insurer will deliver to Company an updated data file in a form consistent with the Base File, which new file will include all corrections to the data in the Closing Data File identified by Insurer as of the Interim Post-Closing Data Cut-Off Date and reflecting any other changes agreed between Insurer and Company (the " Interim Post-Closing Data File "). On the 65 th Business Day following the Closing Date, in connection with the calculation of the Interim Post-Closing [* * *] Amount pursuant to Section 2.8(d)(i) , Insurer will calculate the [* * *] (the " Interim Post-Closing [* * *] Amount ").

(b) Interim Post-Closing Annuity Exhibits . In order for Insurer to create the annuity exhibits that will be attached to the Group Annuity Contract as amended pursuant to Section 2.15(a) :

(i) On the 57 th Business Day after the Closing, Insurer will deliver to Company revised Closing Annuity Exhibits, utilizing and consistent with the Interim Post-Closing Data File.

(ii) As soon as practicable and in any event by the 59 th Business Day following the Closing, Company will notify Insurer of any discrepancy between the revised Closing Annuity Exhibits and the Interim Post-Closing Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.10).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the 62 nd Business Day following the Closing and Insurer will reflect any agreed on changes in the revised Closing Annuity Exhibits (the " Interim Post-Closing Annuity Exhibits ").

(c) Interim Post-Closing Cash and Transferred Assets Exhibit Supplement . On or prior to the day that is the 62 nd Business Day following the Closing Date, Insurer will produce and deliver to Company a cash and transferred assets schedule, which will incorporate the Transferred Assets Schedule delivered pursuant to Section 2.6(c) and updated pursuant to Section 2.19 and reflect any payment pursuant to Section 2.8(e) . Insurer will attach such cash and transferred assets schedule as the " Cash and Transferred Assets Exhibit Supplement " to the amendment to the Group Annuity Contract pursuant to Section 2.15(a) .

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(d) Interim Post-Closing [* * *] Amount . On the 62 nd Business Day following the Closing Date:

(i) Insurer will deliver to Company a calculation of the Interim Post-Closing [* * *] Amount. The " Interim Post-Closing [* * *] Amount " will be equal to [* * *]. Insurer will simultaneously deliver to Company a schedule in the form of the Workbook providing in reasonable detail all information supporting the calculation of the Interim Post-Closing [* * *] Amount.

(ii) Insurer will calculate the Interim Post-Closing [* * *] Amount using the data provided in accordance with Section 2.8(a) (as may be modified pursuant to Section 2.8(b)).

(e) True-Up Payment Upon Resolution of Interim Post-Closing [* * *] Amount . Within five Business Days of the delivery by Insurer of the calculation of the Interim Post-Closing [* * *] Amount:

(i) If the calculation of the Interim Post-Closing [* * *] Amount results in a negative number, then, subject to the execution of the amended Group Annuity Contract in connection with Section 2.15(a) , Insurer will pay to Plan Trustee an amount, in Cash, equal to [* * *]; and

(ii) If the calculation of the Interim Post-Closing [* * *] Amount results in a positive number, then, subject to the execution of the amended Group Annuity Contract in connection with Section 2.15(a) , Independent Fiduciary will irrevocably direct Plan Trustee to pay to Insurer an amount, in Cash, equal to [* * *].

2.9 Calculation of Final [* * *] Amount; Related True Up . As set forth in this Section 2.9 , Insurer, Company and Plan Trustee will cooperate in good faith to produce a Final [* * *] Amount calculation following the Closing Date to reconcile any adjustments to the Interim Post-Closing [* * *] Amount. [* * *]

(a) Final Data File . On the day that is 115 Business Days after the Closing, Insurer will deliver to Company an updated data file in a form consistent with the Base File, which new file will include all corrections to the data in the Interim Post-Closing Data File identified by Insurer as of the Final Data Cut-Off Date and reflecting any other changes agreed between Insurer and Company (the " Final Data File "). On the 126 th Business Day after the Closing Date, in connection with the calculation of the Final [* * *] Amount pursuant to Section 2.9(d)(i) , Insurer will calculate the [* * *] (the " Final [* * *] Amount ").

(b) Final Annuity Exhibits . In order for Insurer to create the Annuity Exhibits that will be attached to the Group Annuity Contract as amended pursuant to Section 2.15(b) :

(i) On the 121 st Business Day after the Closing, Insurer will deliver to Company revised Interim Post-Closing Annuity Exhibits, utilizing and consistent with the Final Data File.

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(ii) As soon as practicable and in any event by the 124 th Business Day following the Closing, Company will notify Insurer of any discrepancy between the revised Interim Post-Closing Annuity Exhibits and the Final Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.10).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the 126 th Business Day following the Closing and Insurer will reflect any agreed on changes in the revised Interim Post-Closing Annuity Exhibits (the " Final Annuity Exhibits ").

(c) Final Cash and Transferred Assets Exhibit Supplement . On or prior to the day that is the 126 th Business Day following the Closing Date, Insurer will produce and deliver to Company a cash and transferred assets schedule, which will incorporate the Transferred Assets Schedule delivered pursuant to Section 2.8(c) and reflect any payment pursuant to Section 2.9(e) . Insurer will attach such cash and transferred assets schedule as the " Cash and Transferred Assets Exhibit Supplement " to the amendment to the Group Annuity Contract pursuant to Section 2.15(b) .

(d) Final [* * *] Amount . On the 126 th Business Day following the Closing Date:

(i) Insurer will deliver to Company a calculation of the Final [* * *] Amount. The " Final [* * *] Amount " will be equal to [* * *]. Insurer will simultaneously deliver to Company a schedule in the form of the Workbook providing in reasonable detail all information supporting the calculation of the Final [* * *] Amount.

(ii) Insurer will calculate the Final [* * *] Amount using the data provided in accordance with Section 2.9(a) (as may be modified pursuant to Section 2.9(b)).

(e) True-Up Payment Upon Resolution of Final [* * *] Amount . By the later of (i) the date that is five Business Days following the final resolution of all disputes in accordance with Section 2.10 and (ii) five Business Days following the delivery by Insurer of the calculation of the Final [* * *] Amount:

(i) If the calculation of the Final [* * *] Amount results in a negative number, then, subject to the execution of the amended Group Annuity Contract in connection with Section 2.15(b) , Insurer will pay to Plan Trustee an amount, in Cash, equal to [* * *]; and

(ii) If the calculation of the Final [* * *] Amount results in a positive number, then, subject to the execution of the amended Group Annuity Contract in connection with Section 2.15(b) , Independent Fiduciary will irrevocably direct Plan Trustee to pay to Insurer an amount, in Cash, equal to [* * *].

2.10 Final [* * *] Amount; Asset Valuation Disputes .

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(a) Within ten Business Days following the delivery by Insurer of the calculation of the Final [* * *] Amount in accordance with Section 2.9(d)(i) , (i) Company may dispute any Insurer Provided Component and (ii) Insurer may dispute any Company Provided Component.

(b) Any dispute described in Section 2.10(a) (an " Arbitration Dispute ") will be resolved in accordance with the procedures set forth in Schedule 2.10(b) .

(c) Any Insurer Provided Component or Company Provided Component that is not disputed pursuant to Section 2.10(a) will be final and binding on the Parties.

For the avoidance of doubt, for purposes of this Section 2.10 a dispute may relate to the application of the Insurer Provided Component or a Company Provided Component, as the case may be, to the calculation of the Closing [* * *] Amount or the Interim Post-Closing [* * *] Amount.

2.11 Adjustment to the Target Closing Date . If subsequent to the calculation or delivery of a calculation or other deliverable that was required to be performed or delivered as of, on or prior to a day that is some number of days prior to the Target Closing Date, the Target Closing Date is adjusted so that it is a later date, the applicable Party will re-calculate or deliver such calculation or other deliverable as of, on or prior, as applicable, to such number of days prior to the Target Closing Date as so adjusted.

2.12 Business Day Adjustments . If any calculation set forth in this Article II is to be performed as of a day that is not a Business Day, such calculation will be performed as of the immediately preceding Business Day.

2.13 Access and Cooperation . Company and Insurer will, and Independent Fiduciary will cause Plan Trustee to, provide the others and their Representatives with reasonable access during normal business hours to examine and will provide copies of (a) the work papers and files related to the preparation of, or support for, the calculations and valuations contemplated by this Article II and (b) the relevant books and records of Insurer, Company or Plan Trustee, as applicable, and to discuss with Insurer's Company's or Plan Trustee's, as applicable, employees and Representatives involved with respect thereto; provided, however, that notwithstanding anything to the contrary set forth in this Agreement, (i) Insurer will not have any obligation to provide Company and its Representatives with access to any [* * *] or any work papers or other information that discloses or reveals [* * *] nor will Company or any of its Representatives attempt to derive, directly or indirectly, any [* * *] from any other information provided to Company, Company's Affiliates or Representatives or Company's Affiliates' Representatives and (ii) Company will not have any obligation to provide Insurer or its Representatives with any work papers of its certified public accountants. If, notwithstanding the foregoing, Company or any of its Representatives obtain any [* * *], whether directly or indirectly, or through a process of derivation, Company will and will direct its Representatives to not use such information and to destroy (and certify to Insurer destruction of) such information and to otherwise transfer any rights in such information to Insurer.

2.14 Data Updates; Mortality Adjustments .

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(a) Access To Covered Life Information . From and after the date of this Agreement through the date on which the Final [* * *] Amount is finally determined pursuant to Sections 2.9 and 2.10 , Company will provide Insurer with reasonable access to all updates of the data, including benefit amounts, benefit forms, dates of birth, dates of death, gender and lives missing from the original data provided by Company that relate to the annuity premium payable to Insurer, in each case limited to data in connection with Covered Lives or Contingent Lives.

(b) Insurer's Verification of Mortality . From and after the Closing Data Cut-Off Date until the Final Data Cut-Off Date, Insurer will, in accordance with Insurer's standard verification practices and procedures, review the Social Security Master Death file and the Lexis Nexis Accurint tool to attempt to determine if any Covered Lives or Contingent Lives were deceased prior to [* * *]. If (i) subject to such standard verification practices and procedures, such data source indicates that a Covered Life or Contingent Life was deceased prior to [* * *] or (ii) Company presents evidence, reasonably acceptable to Insurer, that a Covered Life or Contingent Life was deceased prior to [* * *], then, Insurer will reflect such mortality event in (A) if identified or notified at least two Business Days before the Interim Post-Closing Data Cut-Off Date, the Interim Post-Closing Data File, and reflect such mortality event in its calculation of the Interim Post-Closing [* * *] Amount, and (B) if identified or notified at least prior to delivery of the Final Data File, the Final Data File, and include such mortality event in its calculation of the Final [* * *] Amount. Insurer will provide monthly updates to Company of such mortality review.

(c) Insurer's Review for Date of Birth and Gender Data; Verification of Data Errors . From and after the Closing Data Cut-Off Date until the Final Data Cut-Off Date, Insurer will, in accordance with Insurer's standard verification practices and procedures, review the Lexis Nexis Accurint tool to attempt to determine if there are [* * *]. If any errors in respect of dates of birth or gender are discovered that would potentially give rise to [* * *], Insurer will provide reasonably prompt notice to Company of such errors. If (i) subject to such standard verification practices and procedures, such data source indicates [* * *], or (ii) Company presents reasonably acceptable evidence to Insurer of [* * *], then, Insurer will reflect [* * *] in (A) if identified or notified at least two Business Days before the Interim Post-Closing Data Cut-Off Date, the Interim Post-Closing Data File, and include [* * *] in its calculation of the Interim Post-Closing [* * *] Amount, and (B) if identified or notified at least prior to the delivery of the Final Data File, the Final Data File, and include [* * *] in its calculation of the Final [* * *] Amount. Insurer will provide monthly updates to Company of such review.

2.15 Amendments to the Group Annuity Contract .

(a) Within five Business Days following the delivery by Insurer of the calculation of the Interim Post-Closing [* * *] Amount, Insurer and Company will amend the Group Annuity Contract, in each case, (i) to make any changes to the Closing [* * *] Amount to reflect the Interim Post-Closing [* * *] Amount, (ii) to substitute the Interim Post-Closing Annuity Exhibits for the Closing Annuity Exhibits and (iii) to substitute the " Cash and Transferred Assets Exhibit Supplement " prepared pursuant to Section 2.8(c) for the " Cash and Transferred Assets Exhibit ."

(b) By the later of (i) the date that is five Business Days following the final resolution of all disputes in accordance with Section 2.10 and (ii) five Business Days following the

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delivery by Insurer of the calculation of the Final [* * *] Amount, Insurer and Company will amend the Group Annuity Contract, in each case, (A) to make any changes to reflect the Final [* * *] Amount (as adjusted following the resolution of any disputes in accordance with Section 2.10), (B) to substitute the Final Annuity Exhibits for the Interim Post-Closing Annuity Exhibits and (C) to substitute the " Cash and Transferred Assets Exhibit Supplement " prepared pursuant to Section 2.9(c) for the " Cash and Transferred Assets Exhibit Supplement " prepared pursuant to Section 2.8(c) .

2.16 Amendments to the Workbook and Identified USB Flash Drive . If Company or Insurer identify any error or omission in the Workbook or the Identified USB Flash Drive prior to the payment of the Closing Date Cash Amount, Company or Insurer, as applicable, will promptly inform the other and Company and Insurer will cooperate in good faith to update the Workbook or the Identified USB Flash Drive to resolve such error or omission, and such updated Identified USB Flash Drive will be initialed by Company and Insurer. The Workbook or the Identified USB Flash Drive, as updated pursuant to this Section 2.16 , will be binding on the Parties.

2.17 [* * *] . No less frequently than once every two weeks between the Signing Date and the Closing Date, Independent Fiduciary will direct Plan Trustee to deliver to Insurer [* * *] as set forth in Schedule 2.17 , provided, however, that [* * *] will in all events be provided as of the close of business on the Business Day immediately prior to the Dry-Run Calculation Delivery Date and the Closing Date (each [* * *]). For the avoidance of doubt, the first [* * *] delivered after the Signing Date to Insurer will provide [* * *]. [* * *]

2.18 [* * *] . [* * *]

2.19 Return of [* * *] . On or prior to the day that is five Business Days following the Closing Date, either Insurer or Company may [* * *]. If [* * *], then (a) Insurer or Company, as applicable, will promptly notify the other, and, if [* * *], (b) within five Business Days of such notice Independent Fiduciary will irrevocably direct Plan Trustee to pay Insurer an amount, in Cash, equal to the [* * *], and (c) simultaneously with its receipt of such payment from Plan Trustee, Insurer will return [* * *]. If Insurer and Plan Trustee are unable to agree on whether [* * *], any Party may immediately commence an Arbitration Dispute pursuant to Section 2.10 with respect to such disagreement. By the earlier of (i) agreement among Insurer and Company with respect to identification of [* * *] or (ii) resolution of any disputes with respect to whether [* * *], Insurer will amend the Transferred Assets Schedule to reflect any changes with respect to the assets listed therein.

2.20 Available Cash . Company will make available to the Plans, Cash in the amount necessary to enable Plan Trustee to pay all amounts that it is directed to pay to Insurer by Independent Fiduciary pursuant to this Article II .

2.21 Conflict with Workbook . In the event of any material conflict between the provisions of this Article II and the Workbook, the Workbook will control.

ARTICLE III
COMPANY'S REPRESENTATIONS AND WARRANTIES

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Company hereby represents and warrants to Insurer and Independent Fiduciary as of the Signing Date and, other than with respect to Section 3.9 (which will be given as of the Signing Date only), as of the Closing Date, except as set forth in the Company Disclosure Letter, that:

3.1 Due Organization, Good Standing and Corporate Power . Company is a corporation, duly organized, validly existing and in good standing under the Laws of the Commonwealth of Pennsylvania and the Plan Trust is a trust, validly formed under the Laws of the Commonwealth of Pennsylvania. Company has all requisite power and authority to enter into and carry out its obligations under this Agreement and the Ancillary Agreements to which it is, or will be at Closing, a party and to consummate the Transactions contemplated to be undertaken by Company. Company is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its sponsorship of the Plans makes such qualifications or licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed is not material.

3.2 Authorization of Agreement and Enforceability . Company has received all necessary corporate approvals and no other action on the part of Company is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent that Company is a party thereto) and the consummation of the Transactions contemplated to be undertaken by Company under this Agreement and such Ancillary Agreements. This Agreement is, and the Ancillary Agreements (to the extent that Company is a party thereto) when executed will be, duly executed and delivered by Company, and each is (or when executed will be) a valid and binding obligation of Company, enforceable against Company in accordance with its terms subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar Law affecting the enforcement of creditors' rights generally and by general equitable principles (such exceptions, as applicable to any Person, the " Enforceability Exceptions ").

3.3 Consents, Approvals and No Violations . The execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent that Company is a party thereto) by Company and the consummation by Company of the Transactions contemplated to be undertaken by Company pursuant to this Agreement and such Ancillary Agreements do not (a) violate or conflict with any provision of the Plan Governing Documents or the certificate or articles of incorporation, bylaws, code of regulations or comparable governing documents of Company, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Company or the Plan Governing Documents, (c) require any additional Governmental Approval or (d) require any Consent of or other action by any Person under, constitute a default or an event that, with or without notice or lapse of time or both, would constitute a default under or cause or permit termination, cancellation, acceleration or other change of any right or obligation or the loss of any benefit under any provision of any Contract to which Company is a party, except where the occurrence of any of the foregoing would not have a material adverse impact on Company's ability to consummate the Transactions.

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3.4 Compliance with ERISA .

(a) The Plans are maintained under and are subject to ERISA and operated in compliance with ERISA in all material respects. The Plan Trust is maintained under and is subject to ERISA and, to Company's Knowledge, is in compliance with ERISA in all material respects. The Plans' most recent favorable Internal Revenue Service determination letters are dated June 6, 2012 and July 30, 2012, and, to Company's Knowledge, no event has occurred since such dates that is reasonably likely to result in the Plans losing their Tax Qualified status. All Plan amendments necessary to effect the Transactions, to the extent that they require authorization by Company or its Employee Benefits Committee, have been, or will be by the Closing Date, duly authorized and made by Company or its Employee Benefits Committee. Plan Trustee has been duly appointed as the directed trustee of the Plan Trust.

(b) Independent Fiduciary has been duly appointed as independent fiduciary of the Plans with respect to the purchase of one or more group annuity contracts as set forth in the IF Engagement Letter to (i) be the sole fiduciary responsible for selecting one or more insurers to provide annuities in accordance and compliance with the ERISA Requirements, (ii) determine whether the Transactions and the Group Annuity Contract satisfy ERISA, (iii) represent the interests of the Plans and their participants and beneficiaries in connection with the negotiation of a commitment agreement and the terms of any agreements with Insurer, including the Group Annuity Contract and the Annuity Certificates, (iv) direct Plan Trustee on behalf of the Plans to transfer the Transferred Assets, the Closing Date Cash Amount and any post-Closing cash payments that are payable by Plan Trustee on behalf of the Plans in connection with the consummation of the Transactions and pay any amounts payable to Insurer under Section 2.5 of the Group Annuity Contract and (v) take all other actions on behalf of the Plans necessary to effectuate the foregoing (to the extent specified in the IF Engagement Letter), including to perform the covenants and agreements and make the representations and warranties in this Agreement, the Ancillary Agreements and the IF Engagement Letter, to the extent to be performed or made by Independent Fiduciary.

3.5 Plan Investments . There are no commingled investment vehicles that hold Plan Assets, the units of which are or will be Plan Assets involved in the Transactions.

3.6 No Brokers' Fee . Company has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or its respective Affiliates or Representatives, could be liable.

3.7 Accuracy of Information . To Company's Knowledge, (a) the mortality experience data files titled [* * *] uploaded to the Data Room on [* * *], titled [* * *] uploaded to the Data Room on [* * *] and titled [* * *] uploaded to the Data Room on [* * *] did not contain any misstatements or omissions that were, in the aggregate, material, and (b) the data in respect of benefit amounts, forms of annuity, solicitation status and the census data for date of birth, date of death, state of residence or gender, in each case, with respect to the Covered Lives or Contingent Lives that was or is furnished by or on behalf of Company to Insurer, was not generated using any materially incorrect systematic assumptions or material omissions.

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3.8 Delivery of Plan Governing Documents. True, correct and complete copies of the Plan Governing Documents set forth on Schedule 3.8 have been delivered to Independent Fiduciary by Company on or prior to the Signing Date.

3.9 Settlement Accounting. As of the Signing Date, to Company's Knowledge there are no circumstances existing or that would reasonably be expected to occur that would be likely to cause Company to conclude that it may not account for the Transactions as a settlement under ASC 715.

3.10 Litigation by Plan Beneficiaries and Plan Participants. There is no Action pending or, to Company's Knowledge, threatened, by or on behalf of any Plan Beneficiary or Plan Participant relating to the Plans or any benefit payable or alleged to be payable pursuant to the Plans.

3.11 No Other Representations or Warranties and Reliance. Except for the representations and warranties of Company expressly set forth in this Article III, neither Company, any of its Affiliates nor any other Person makes any express or implied representation or warranty on behalf of Company or any of its Affiliates with respect to Company, its Affiliates, the Transferred Assets or the Transactions. Company acknowledges and agrees that Insurer, and Independent Fiduciary have relied on the representations and warranties in this Article III, and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.2(a) or 8.3(a).

ARTICLE IV
INDEPENDENT FIDUCIARY'S REPRESENTATIONS AND WARRANTIES

Independent Fiduciary hereby represents and warrants to Company and Insurer as of the Signing Date and the Closing Date that:

4.1 Due Organization, Good Standing and Corporate Power.

(a) Independent Fiduciary is a trust company duly organized, validly existing and in good standing under the Laws of the Commonwealth of Massachusetts. Independent Fiduciary has all requisite power and authority to enter into and carry out its obligations under this Agreement and the Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto) and to consummate the Transactions contemplated to be undertaken by Independent Fiduciary in this Agreement and in the Ancillary Agreements. Independent Fiduciary is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its representation of the Plans makes such qualification or licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed is not material.

(b) Independent Fiduciary meets the requirements of, and in the Transactions is acting as, an investment manager under ERISA § 3(38) and further constitutes a "qualified professional asset manager" under the Department of Labor Prohibited Transaction Class Exemption

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84-14 solely with respect to the transfer of assets to Insurer in connection with the Transactions and the Group Annuity Contract (but not the selection of such assets or the management of such assets prior to the transfer). Independent Fiduciary is experienced in independent fiduciary work and, together with its reliance on its consultant, AonHewitt Investment Consulting, Inc., and its counsel, Groom Law Group, Chartered, Independent Fiduciary is knowledgeable concerning the large scale group annuity marketplace and reasonably believes that it has the requisite expertise to select Insurer issuing the Group Annuity Contract and perform its obligations under this Agreement, the Ancillary Agreements and the IF Engagement Letter. Independent Fiduciary accepted its designation as the sole fiduciary of the Plans with authority to select one or more insurers to issue one or more group annuity contracts in the IF Engagement Letter (a true and correct copy of which has been provided to Insurer, with the fees to be paid to Independent Fiduciary redacted), and Independent Fiduciary reaffirms its fiduciary status as set forth in the IF Engagement Letter. Independent Fiduciary has provided and will continue to provide the services described in Section 2 of the IF Engagement Letter prudently and for the exclusive benefit and in the sole interest of the Plans and their participants and beneficiaries. Independent Fiduciary has accepted appointment as independent fiduciary of the Plans to (i) be the sole fiduciary responsible for selecting one or more insurers to provide annuities in accordance and compliance with the ERISA Requirements, (ii) determine whether the Transactions and the Group Annuity Contract satisfy ERISA, (iii) represent the interests of the Plans and their participants and beneficiaries in connection with the negotiation of a commitment agreement and the terms of any agreements with Insurer, including the Group Annuity Contract and the Annuity Certificates, (iv) direct Plan Trustee on behalf of the Plans to transfer the Transferred Assets, the Closing Date Cash Amount and any post-Closing cash payments that are payable by Plan Trustee on behalf of the Plans in connection with the consummation of the Transactions and pay any amounts payable to Insurer under Section 2.5 of the Group Annuity Contract and (v) take all other actions on behalf of the Plans necessary to effectuate the foregoing, including to perform the covenants and agreements and make the representations and warranties in this Agreement and the IF Engagement Letter, to the extent to be performed or made by Independent Fiduciary.

4.2 Authorization of Agreement and Enforceability . Independent Fiduciary has received all necessary corporate approvals and no other action on the part of Independent Fiduciary is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto) and the consummation of the Transactions contemplated to be undertaken by Independent Fiduciary under this Agreement and the Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto). This Agreement and all Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto), have been duly executed and delivered by Independent Fiduciary and are valid and binding obligations of Independent Fiduciary, enforceable against Independent Fiduciary, in accordance with their respective terms, subject to the Enforceability Exceptions.

4.3 Consents, Approvals and No Violations . The execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto) by Independent Fiduciary and the consummation by Independent Fiduciary of the Transactions contemplated to be undertaken by Independent Fiduciary pursuant to this Agreement and the Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto) do not (a) violate or conflict with the certificate or articles of incorporation, bylaws, code of regulations

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or the comparable governing documents of Independent Fiduciary, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Independent Fiduciary, (c) require any additional Governmental Approval or (d) require any Consent of or other action by any Person.

4.4 ERISA Related Determinations .

(a) Independent Fiduciary is fully qualified to serve as an independent fiduciary in connection with the Transactions and any Ancillary Agreements (to the extent that Independent Fiduciary is a party thereto), and it is independent of Company and Insurer. Independent Fiduciary has ensured that AonHewitt Investment Consulting, Inc. has established commercially reasonable ethical walls between the personnel working on the Transactions and the personnel working on other matters involving Company, Insurer or any of either's Affiliates.

(b) Independent Fiduciary has selected Insurer to issue the Group Annuity Contract as set forth in this Agreement and such selection, the Transactions, any Ancillary Agreements and the Group Annuity Contract (including its terms) each satisfies the ERISA Requirements, subject to Section 4.4(c) . Independent Fiduciary has delivered a certification confirming the foregoing, executed by a duly authorized officer of Independent Fiduciary, to the Committee.

(c) If (i) an Independent Fiduciary MAC has not occurred between the Signing Date and the Closing Date, or an Independent Fiduciary MAC has occurred, but it is not continuing on the Closing Date, and (ii) the officers' certificates contemplated by Sections 2.3(b) and 2.3(c) are delivered to Independent Fiduciary, the selection of Insurer to provide the Group Annuity Contract, the terms of the Group Annuity Contract and the Plans' use of assets for the purchase of the Group Annuity Contract as contemplated by this Agreement will satisfy the ERISA Requirements as of the Closing Date.

(d) The Transactions and the purchase of the Group Annuity Contract do not result in a Non-Exempt Prohibited Transaction.

(e) Sections 4.4(b) , 4.4(c) and 4.4(d) assume that the representations in Sections 3.5 and 5.11 and the first sentence in Section 5.12 are true and correct in all material respects as of the Closing Date.

(f) The Plan Trust (i) will receive no less than adequate consideration for the Transferred Assets that it transfers in connection with the Transactions and (ii) will pay no more than adequate consideration for the Group Annuity Contract, in each case within the meaning of "adequate consideration" under ERISA § 408(b)(17)(B) and Code § 4975(f)(10).

4.5 No Brokers' Fee . Independent Fiduciary has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or its respective Affiliates or Representatives, could be liable.

4.6 No Other Representations or Warranties and Reliance . Except for the representations and warranties of Independent Fiduciary expressly set forth in this Article IV , neither Independent

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Fiduciary, any of its Affiliates nor any other Person makes any express or implied representation or warranty on behalf of Independent Fiduciary or any of its Affiliates with respect to Independent Fiduciary, its Affiliates, the Transferred Assets or the Transactions. Independent Fiduciary acknowledges and agrees that Insurer and Company have relied on the representations in this Article IV , and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.1(a) or 8.2(a) .

ARTICLE V
INSURER'S REPRESENTATIONS AND WARRANTIES

Insurer hereby represents and warrants to Company and Independent Fiduciary as of the Signing Date and, other than with respect to Sections 5.6 and 5.13 (in each case, which will be given as of the Signing Date only), as of the Closing Date that:

5.1 Due Organization, Good Standing and Corporate Power . Insurer is a life insurance company duly organized, validly existing and in good standing under the Laws of the Commonwealth of Massachusetts. Insurer has all requisite power and authority to enter into and carry out its respective obligations under this Agreement and the Ancillary Agreements to which it is, or will be at Closing, a party, and to consummate the Transactions contemplated to be undertaken by it, as applicable in this Agreement. Insurer is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its performance of its obligations in the Group Annuity Contract makes such qualification or licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed would not be material.

5.2 Authorization of Agreement and Enforceability . Insurer has received all necessary corporate approvals and no other action on the part of Insurer or its Affiliates is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements to which it is a party, and the consummation of the Transactions contemplated to be undertaken by Insurer under this Agreement. This Agreement and the Ancillary Agreements (to the extent that Insurer is a party thereto), other than the Group Annuity Contract, which is addressed by Section 5.4 , have been duly executed and delivered by Insurer, and each is (or when executed will be) a valid and binding obligation of Insurer, enforceable against Insurer in accordance with its terms, subject to the Enforceability Exceptions.

5.3 Consents, Approvals and No Violations . Except for the approvals of the Governmental Authorities listed on Schedule 5.3 , the execution and delivery of this Agreement and the Ancillary Agreements (to the extent that Insurer is a party thereto) by Insurer and the consummation by Insurer of the Transactions contemplated to be undertaken by Insurer pursuant to this Agreement and such Ancillary Agreements do not (a) violate or conflict with any provision of its certificate or articles of incorporation, bylaws, code of regulations or comparable governing documents, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Insurer, (c) require any Governmental Approval except for the approvals of Governmental Authorities listed on Schedule 5.3 or (d) require any Consent of or other action by any Person under,

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constitute a default or an event that, with or without notice or lapse of time or both, would constitute a default under or cause or permit termination, cancellation, acceleration or other change of any right or obligation or the loss of any benefit under, any provision of any Contract to which Insurer is a party, except where the occurrence of any of the foregoing would not have a material adverse effect on Insurer's ability to consummate the Transactions. No approval by a Governmental Authority or otherwise is required for Insurer to issue the Group Annuity Contract. No filing or approval is required to issue the Annuity Certificates in accordance with the Group Annuity Contract, other than any filing made or approval received as of the date of this Agreement and filings with and approvals of state insurance Governmental Authorities in the states listed on Schedule 5.3 .

5.4 Enforceability of Group Annuity Contract . The Group Annuity Contract, when executed contemporaneously with the completion of the Payment at Close, will be duly executed and delivered by Insurer and will be a valid and binding obligation of Insurer and enforceable against Insurer by Contractholder and each Covered Life, Contingent Life and Beneficiary, in accordance with its terms, subject to the Enforceability Exceptions. After Contractholder ceases to exist, or notifies Insurer that it will cease to perform its obligations under the Group Annuity Contract, the Group Annuity Contract will remain a valid and binding obligation of Insurer and enforceable against Insurer by each Covered Life, Contingent Life and Beneficiary, in accordance with its terms, subject to the Enforceability Exceptions. At all times, the right to a benefit under the Group Annuity Contract, in accordance with its terms, will be enforceable by the sole choice of the Covered Life, Contingent Life or Beneficiary to whom the benefit is owed by the Group Annuity Contract, subject to the Enforceability Exceptions.

5.5 Compliance with Laws . The business of Insurer has been and is being conducted in material compliance with applicable Laws, and none of the licenses, permits or Governmental Approvals required for the continued conduct of the business of Insurer as such business is currently being conducted will lapse, terminate, expire or otherwise be impaired as a result of the consummation of the Transactions contemplated to be undertaken by Insurer or its Affiliates under this Agreement, except as, in either case, would not reasonably be expected to have, individually or in the aggregate, a material adverse effect on the ability of Insurer to perform its obligations under this Agreement.

5.6 Litigation . There is no Action pending or, to Insurer's Knowledge, threatened against Insurer that in any manner challenges or seeks to prevent, enjoin or materially alter or delay the Transactions or that could reasonably be expected to materially impair or restrict Insurer's ability to consummate the Transactions and to perform its obligations thereunder.

5.7 No Brokers' Fee . Insurer has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or their respective Affiliates or Representatives, could be liable.

5.8 Accuracy of Data Provided . Insurer represents and warrants that, to Insurer's Knowledge, (a) all material information provided by Insurer to Company or Independent Fiduciary (other than Company Provided Components, including any Insurer information based on Company Provided Components) in connection with the Transactions was, as of the date indicated on such information, true and correct in all material respects and (b) no change has occurred since the date

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indicated on such information that Insurer has not publicly disclosed or disclosed to the recipient of such information that would cause such information, taken as a whole, to be materially false or misleading.

5.9 No Post-Closing Liability . Following the Closing, none of Company, the Plans, Company's Affiliates, Independent Fiduciary nor any of their respective directors, officers, trustees or fiduciaries will have any Liability to pay any Annuity Payment.

5.10 Sufficient Resources and Market Sophistication . Insurer is a sophisticated investor with experience in the purchase of publicly traded securities and privately traded debt and equity securities of the type to be included in the Transferred Assets. Insurer has had access to such information as it deems necessary to make its decision to acquire the Transferred Assets from the Plans. Without limiting any rights or remedies of Insurer set forth in this Agreement, Insurer acknowledges that, [* * *], (a) Company and the Plans' fiduciaries currently may have information with respect to the Transferred Assets that is not known to Insurer and that may be material to a decision to acquire the Transferred Assets and (b) Insurer has determined to acquire the Transferred Assets and the investment risk associated with the Transferred Assets notwithstanding its lack of knowledge of such information. Insurer acknowledges and agrees that Company and the Plans have not given any investment advice nor rendered any opinion to Insurer as to whether the acquisition of the Transferred Assets is prudent. For the avoidance of doubt, nothing in this Section 5.10 will affect the truth or accuracy of Company's or Independent Fiduciary's representations and warranties expressly set forth in this Agreement.

5.11 Relationship to the Plans . Insurer is not (a) a trustee of the Plans (other than a non-discretionary trustee who does not render investment advice with respect to any assets of the Plans), (b) a plan administrator (within the meaning of ERISA § 3(16)(A) and Code § 414(g)), (c) a fiduciary (within the meaning of ERISA § 3(16)(A)) who has expressly agreed in writing to manage, acquire or dispose of Plan Assets on a discretionary basis or (d) an employer any of whose employees are covered by the Plans or an Affiliate of any such employer.

5.12 Compliance with ERISA . Schedule 5.12 sets forth a true and complete list of Insurer and Insurer's Affiliates that are (a) investment managers within the meaning of ERISA § 3(38) and that manage assets subject to ERISA and (b) other defined benefit service providers, including investment advisors under the Investment Advisers Act of 1940. The execution and delivery by Insurer of this Agreement and the Ancillary Agreements (to the extent that Insurer is a party thereto), and the consummation by Insurer of the Transactions contemplated to be undertaken by Insurer, do not result in a Non-Exempt Prohibited Transaction. Neither Insurer nor any of Insurer's Affiliates is a fiduciary of the Plan who either (a) has or exercises any discretionary authority or control with respect to the investment of Plan Assets that are or will be involved in the Transactions or the transactions contemplated by the Ancillary Agreements or (b) renders investment advice (within the meaning of ERISA § 3(21)(A)(ii) or Code § 4975(e)(3)(B)) with respect to such assets.

5.13 Financial Metrics . As of the Signing Date, Insurer's most recent Projected RBC Ratio determined in accordance with Schedule 5.13 was [* * *].

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5.14 No Other Representations or Warranties and Reliance . Except for the representations and warranties of Insurer expressly set forth in this Article V , none of Insurer, any of its Affiliates or any other Person makes any express or implied representation or warranty on behalf of Insurer or any of its Affiliates with respect to Insurer, its Affiliates or the Transactions. Insurer acknowledges and agrees that Company and Independent Fiduciary have relied on the representations and warranties in this Article V , and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.1(a) or 8.3(a) .

ARTICLE VI
PRE-CLOSING COVENANTS

The Parties agree as follows with respect to the period between the Signing Date and the Closing Date (except as otherwise expressly stated to apply to a different period):

6.1 Efforts to Close, Regulatory Clearances and Third-Party Consents .

(a) In addition to the actions specifically provided for elsewhere in this Agreement and in any Ancillary Agreement, each of the Parties will cooperate with each other and use (and, except with respect to Independent Fiduciary, will cause their respective Affiliates to use) their respective Commercially Reasonable Efforts to take, or to cause to be taken, all actions, and to do, or to cause to be done, all things reasonably necessary on its part to consummate the Closing. Without limiting the generality of the foregoing, Company and Insurer will use their respective Commercially Reasonable Efforts to obtain and to cause others to obtain, as soon as practicable, all required Governmental Approvals at the Closing or as otherwise contemplated by this Agreement that may be or become necessary for the performance of their respective obligations under this Agreement and the Ancillary Agreements and the consummation of the Transactions, including approval of the Annuity Certificates from all state agencies from which approval is required pursuant to Section 7.2(d) , and will cooperate fully with each other in promptly seeking to obtain such Governmental Approvals and Consents. Without limiting the foregoing and subject to applicable legal limitations and the written instructions of any Governmental Authority, from the Signing Date until the Closing Date, each of the Parties agrees to (i) reasonably cooperate and consult with one another, (ii) furnish to the other Parties such necessary information and assistance as such other Party may reasonably request in connection with its preparation of any notifications or filings, (iii) keep each other apprised of the status of material matters relating to the completion of the Transactions, including apprising the other Parties of the substance of material notices or communications received by such Party from any third party or any Governmental Authority with respect to such Transactions, within five Business Days of receipt thereof, and (iv) to the extent reasonably practicable, permit the other Parties to review and incorporate the other Party's reasonable comments in any material communication to be given by it to any Governmental Authority with respect to the Transactions.

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(b) Without limiting the generality of Section 6.1(a) , where the cooperation of third parties that are not Governmental Authorities, such as a trustee, record keeper or paying agent, would be necessary for a Party to completely fulfill its obligations under this Agreement or any Ancillary Agreement, such Party will use its Commercially Reasonable Efforts to cause such third parties to provide such cooperation.

6.2 Public Announcements .

(a) Company will have the right to prepare and issue its own press release announcing the execution and delivery of this Agreement and the Transactions, a copy of which will be provided to Insurer and Independent Fiduciary for review no less than two days prior to the issuance thereof, and Company will consider in good faith any comments made by Insurer (or Independent Fiduciary, as applicable). From the Signing Date through the Closing Date, Company and Insurer each may make such public written or oral statements related to the Transactions as it deems necessary or appropriate, in its sole discretion. However, each such Party will seek to give the other Party (and Independent Fiduciary, to the extent the statement references Independent Fiduciary or its role, duties or conclusions) a reasonable opportunity to review and comment on such statements in advance to the extent practicable and the Party will consider any comments made by such other Party in good faith, it being understood that neither Company nor Insurer (nor Independent Fiduciary) will have any right of approval over public statements by the other Party. Each of Company and Insurer may make any public disclosure required by applicable Law or securities listing standards, in which case each of Company and Insurer will provide such disclosure to the other Party (and to Independent Fiduciary, to the extent such disclosure references Independent Fiduciary or its role, duties or conclusions) for review prior to the issuance thereof and will consider any comments made by such other Party (or Independent Fiduciary, as applicable) in good faith.

(b) Insurer acknowledges that Company will publicly disclose any information that it reasonably believes is required by the rules of the SEC to be so disclosed. However, if Company concludes that disclosure of this Agreement is required by such rules, (i) Company and Insurer will cooperate to make an application by Company with the SEC for confidential treatment of information relating to the pricing of the Group Annuity Contract and such other information as Company and Insurer mutually conclude is competitively sensitive from the perspective of Company or Insurer or otherwise merits confidential treatment and (ii) Company will include Insurer in any material correspondence (written or oral) with the SEC regarding such application for confidential treatment, and Company and Insurer will otherwise reasonably cooperate in connection with such application, including by Company proposing to redact confidential portions of documents as to which the SEC staff seeks disclosure.

(c) Notwithstanding anything to the contrary in this Agreement and without limiting the generality of Section 6.2(a) , (i) Insurer may disclose without the consent of any other Party that (in substance) Insurer was selected by Independent Fiduciary through a competitive process, and (ii) Company may disclose, without consent of or notice to any other Party that (in substance) the premium to be paid at Closing to Insurer is fair and reasonable and represents the best pricing available under the circumstances.

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6.3 Notification of Certain Matters . From the Signing Date until the Closing Date, each Party will give written notice to the other Parties within five Business Days of (a) any notice or other communication from any Person alleging that the Consent of such Person is or may be required in connection with the Transactions or that otherwise relates to obtaining such Consent, (b) any Action commenced or threatened in writing against, relating to or involving, or otherwise affecting, it or any of its Affiliates that relate to the consummation of the Transactions or any Party's ability to perform its obligations thereunder, (c) any material communications with any Covered Life, Contingent Life or Beneficiary that relate to the Transactions and (d) the occurrence of any change or event that would reasonably be expected to cause, individually or in the aggregate, any condition to Closing in Article VIII not to be satisfied (it being understood, however, that no delay or failure to provide any such notice will be deemed to be a waiver of such condition).

6.4 Administrative Transition Process .

(a) Insurer and Company will use their respective Commercially Reasonable Efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary to coordinate and allow for the provision of recordkeeping and administration services regarding Annuity Payments and coordinate the transfer to Insurer , or Other Insurer in accordance with the Administrative Services Agreement, on and after the Annuity Commencement Date of all administration responsibilities necessary to effectively provide the recordkeeping and administration services regarding Annuity Payments commencing on the Annuity Commencement Date.

(b) Company and the Plans will provide Insurer with the information on and will complete all processes in Schedule 6.4(b) (including those that occur after Closing).

(c) If, despite Section 6.4(a) , Company and the Plans do not or cannot provide Insurer with the information on, or complete all processes in, Schedule 6.4(b) , (occurring prior to the Closing Date) and, as a result, Insurer or Other Insurer is in good faith unable to provide the recordkeeping and administration services regarding Annuity Payments beginning on the Annuity Commencement Date, Insurer will use its Commercially Reasonable Efforts to find alternative methods to facilitate the issuance of Annuity Payments through existing commercial arrangements or any other reasonable method that is designed to ensure that such Annuity Payments are made in a manner that complies with the obligations of the Group Annuity Contract (an " Alternative Arrangement "). Company will cooperate in good faith with Insurer to find an Alternative Arrangement.

(d) Insurer will use its Commercially Reasonable Efforts to enter into the Administrative Services Agreement on the Closing Date.

6.5 Non-Solicitation . Unless terminated pursuant to Article X , from and after the Signing Date and prior to the Closing Date, Company will not and will cause its respective Representatives (which for these purposes will not be deemed to include Independent Fiduciary) not to (a) solicit, initiate or knowingly facilitate any Alternative Transaction Proposal or the making or consummation thereof, (b) enter into any agreement, letter of intent, agreement in principle or other similar instrument with respect to any Alternative Transaction Proposal, (c) continue or otherwise

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participate in any discussions (except, in response to an inquiry by any Person, to notify such Person of the existence of this Section 6.5) or negotiations regarding, or furnish to any Person any information in connection with, any Alternative Transaction Proposal or (d) enter into or amend any agreement or other arrangement to engage any Person (including Independent Fiduciary) to solicit any Alternative Transaction Proposal.

6.6 Information Provided to Independent Fiduciary . Between the Signing Date and the Closing Date, Insurer will provide to Independent Fiduciary any information that (a) is consistent with the type and amount of information provided during Independent Fiduciary's pre-signing due diligence process, (b) is otherwise prepared in Insurer's ordinary course of business (including any information that is prepared for the purpose of providing information to the Credit Rating Agencies) and (c) relates to Insurer, in each case as may be reasonably requested by Independent Fiduciary.

6.7 [* * *] . From and after the date of this Agreement to the earlier of the termination of this Agreement and the Closing Date, Insurer will not, without the prior written consent of Company (not to be unreasonably withheld or delayed), execute a commitment providing for the consummation prior to the Closing Date of any of the following or consummate prior to the Closing Date any of the following that were not subject to a prior commitment:

(a) [* * *]; or

(b) [* * *].

However, this Section 6.7 will not preclude Insurer from taking any of the foregoing actions unless, after giving pro forma effect to the actions contemplated by any such commitment and any capital contributions made or irrevocably committed to be made to Insurer in connection with such commitment or in the case of any of the foregoing actions not subject to a prior commitment, the amount of Insurer's most recent calculation of its Projected RBC Ratio would have been [* * *]. For the avoidance of doubt, Insurer's compliance with this Section 6.7 will in no way limit Independent Fiduciary's discretion in any respect as to whether an Independent Fiduciary MAC has occurred.

6.8 No Insurer Communications . From the date of this Agreement until the issuance of an Annuity Certificate or notice of guaranty by Insurer to a Covered Life, other than as provided for in this Agreement, without Company's prior written consent, (a) Insurer will cause the employees of its retirement services business unit not to initiate any contact or communication with such Plan Participant or Plan Beneficiary in connection with the Transactions, (b) Insurer will not, and will cause all of its Affiliates not to, provide any of their respective insurance agents, wholesalers or retailers with any contact information of such Plan Participants or Plan Beneficiaries and (c) Insurer will not, and will cause all of its Affiliates not to, provide any of their respective other Representatives with any contact information of such Plan Participants or Plan Beneficiaries, except for those Representatives of Insurer or any of its Affiliates who need to know such information for purposes of these Transactions and agree to comply with this Section 6.8 and Section 11.14 . However, this Section 6.8 , will not restrict employees of Insurer's retirement services business unit from contacting any Plan Participant or Plan Beneficiary in connection with, or to facilitate, Insurer's performance of its obligations under the Group Annuity Contract, the Annuity Certificates or this Article VI or

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Article VII . If any Plan Participant or Plan Beneficiary contacts an employee of Insurer's retirement services business unit, Insurer and Company will cooperate to coordinate a response to the Plan Participant or Plan Beneficiary.

ARTICLE VII
OTHER COVENANTS

7.1 Company Actions . Except as otherwise expressly contemplated by this Agreement, following the Closing Date, Company will use its Commercially Reasonable Efforts to take, or cause to be taken, all actions, and to do, or cause to be done, all things reasonably necessary on their part to effectuate the Transactions.

7.2 Insurer Actions . Following the Closing Date, Insurer will:

(a) Mail an Annuity Certificate to each Covered Life (and each Contingent Life who is receiving Annuity Payments as of the day the Annuity Certificates are issued) at the last address designated for such Covered Life (or Contingent Life, as applicable) by Company or the Plans, such mailing to be made as promptly as practicable but in no event later than the later to occur of (i) 116 days after the Annuity Commencement Date and (ii) 30 days after Company and Insurer agree on the forms of Annuity Certificate. However, if the final form of Annuity Certificate agreed to by Company and Insurer requires Insurer or Other Insurer to make any non-de minimis changes in their programming to prepare such Annuity Certificates, the reference to "30 days" in clause (ii) will be deemed to be "60 days." Further, solely with respect to any form of Annuity Certificate issuable to a Covered Life that must be approved by the relevant state insurance Governmental Authorities in any state but has not been approved by the date specified above, Insurer will mail such Annuity Certificate to the relevant Covered Life (by delivery of such Annuity Certificate to the last address designated for such Covered Life by Company) as promptly as reasonably practicable and in any case within 30 days following the date on which such Annuity Certificate has been approved by such relevant state insurance Governmental Authority (or if such approval results in a need for Insurer or Other Insurer to make any non-de minimis changes in their programming to prepare such Annuity Certificates, the reference to "30 days" in this proviso will be deemed to be "60 days"). To the extent that any changes are made to the form of Annuity Certificate or the related benefit terms after Company, Insurer and Other Insurer have agreed on the form of annuity certificate to be filed and the related benefit terms, the deadline to mail an Annuity Certificate to Covered Lives in this Section 7.2(a) will be extended by the number of days elapsed since Company, Insurer and Other Insurer had first agreed on the form of annuity certificate and the related benefit terms. Notwithstanding the foregoing, Insurer will use its Commercially Reasonable Efforts to cause its Annuity Certificate to be mailed in the same package as Other Insurer's annuity certificate.

(b) Make or cause to be made all Annuity Payments to each Covered Life, Contingent Life and Beneficiary, as required under the Group Annuity Contract, from and after the Annuity Commencement Date.

(c) At Company's request, include a notice, provided by Company and reasonably acceptable to Insurer, regarding Annuity Certificates in Insurer's "welcome" mailing to

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the Covered Lives and Contingent Lives or other subsequent mailings made by Insurer to the Covered Lives and Contingent Lives.

(d) Use its (i) reasonable best efforts to obtain the applicable approvals by the relevant state insurance Governmental Authority to mail an Annuity Certificate to any Covered Life as soon as practicable following the Closing Date and (ii) Commercially Reasonable Efforts to take, or cause to be taken, all other actions, and to do, or cause to be done, all other things reasonably necessary on its part to effectuate the Transactions.

7.3 Correspondence Center .

(a) Insurer , or Other Insurer as agent for Insurer pursuant to the Administrative Services Agreement, will maintain, at its cost and expense, a toll-free phone number or a website (the " Annuity Benefits Correspondence Center ") that will be available from and after the Closing Date for Covered Lives and Contingent Lives to call with questions related to the Group Annuity Contract and the Annuity Certificates, it being understood that the Annuity Benefits Correspondence Center need not be solely dedicated to Covered Lives and Contingent Lives.

(b) For a period of five years following the Closing Date, Company will maintain, at its cost and expense, a point of contact (the " PPG Benefits Center ") that will be available from and after the Closing Date and to which Insurer may refer Covered Lives and Contingent Lives that pose questions to the Annuity Benefits Correspondence Center related to their benefits under the Plans, it being understood that the PPG Benefits Center need not be solely dedicated to Covered Lives and Contingent Lives.

(c) If any Covered Life, Contingent Life or Beneficiary contacts Insurer or any of its Affiliates or Representatives with questions related to their benefits under the Plans, Insurer or its Affiliates or Representatives, as applicable, will confer with Other Insurer regarding a response and may refer such person to the PPG Benefits Center. If any Covered Life, Contingent Life or Beneficiary contacts Company or any of its Affiliates or Representatives with questions related to the Group Annuity Contract or the Annuity Certificates, Company or its Affiliates or Representatives, as applicable, may refer such person to the Annuity Benefits Correspondence Center.

7.4 Claims Procedures . From and after the Annuity Commencement Date, Insurer , or Other Insurer as agent for Insurer pursuant to the Administrative Services Agreement, will maintain written rules and procedures to govern the submission to Insurer of claims and requests by Covered Lives and Contingent Lives regarding Annuity Payments. Such written rules and procedures will be consistent with Insurer's standard rules and procedures (for handling inquiries from annuitants covered by its group annuity contracts), as the same may change from time to time.

7.5 Compliance with Prohibited Transaction Exemptions . From the Signing Date until the Closing Date, (a) Insurer agrees to keep current the information on Schedule 5.12 by providing Company on a monthly basis with any updates relating to the formation of any new legal entities or the entry into any agreements with or by investment managers or investment advisors following the Signing Date, and (b) Company will not enter into any agreements with Insurer or any investment

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manager or advisor listed on Schedule 5.12 (as it may be updated from time to time) whereby Insurer or any of its Affiliates would be a fiduciary expressly authorized in writing to manage, acquire or dispose of Plan Assets on a discretionary basis that have been identified as, or are reasonably likely to be included as, a Transferred Asset. If Insurer discovers the existence of any such agreement, Insurer will, and will cause its Affiliates to, cease providing any discretionary asset management services with respect to any Plan Asset before such Plan Asset becomes a Transferred Asset and Company will consent to any such termination of services.

ARTICLE VIII
CONDITIONS TO OBLIGATION TO CLOSE

8.1 Conditions to Company's Obligations . Company's obligations to consummate the Transactions contemplated by this Agreement in connection with the Closing are subject to satisfaction or, other than with respect to the condition in Section 8.1(d) (which cannot be waived), waiver by Company of the following conditions:

(a) The representations and warranties in Articles IV and V (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects);

(b) Insurer and Independent Fiduciary will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

(c) No Order will be in effect that prohibits consummation of any of the Transactions and no Material Litigation will have been filed or commenced and then be pending;

(d) Independent Fiduciary will have confirmed that no Independent Fiduciary MAC is continuing as of the Closing Date;

(e) Company will have confirmed that it may account for the Transactions as a settlement as contemplated under ASC 715;

(f) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected;

(g) Each delivery contemplated by Sections 2.3(a) and 2.3(b) will have been delivered; and

(h) Simultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contracts .

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8.2 Conditions to Insurer's Obligations . Insurer's obligation to consummate the Transactions contemplated by this Agreement in connection with the Closing are subject to satisfaction or waiver by Insurer of the following conditions:

(a) The representations and warranties in Articles III and IV (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects);

(b) Company and Independent Fiduciary will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

(c) No Order will be in effect that prohibits consummation of any of the Transactions and no Material Litigation will have been filed or commenced and then be pending;

(d) Each delivery contemplated by Sections 2.3(a) and 2.3(c) will have been delivered;

(e) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected; and

(f) Simultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contracts .

8.3 Conditions to Independent Fiduciary's Obligations . Independent Fiduciary's obligation to, and to direct Plan Trustee to, consummate the Transactions contemplated by this Agreement in connection with the Closing is subject to satisfaction or waiver (provided that the condition in Section 8.3(b) may not be waived) of the following conditions:

(a) The representations and warranties in Articles III and V (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects), and Insurer and Company will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

(b) Independent Fiduciary will have confirmed that no Independent Fiduciary MAC is continuing as of the Closing Date;

(c) No Order will be in effect that prohibits consummation of any Transactions contemplated by this Agreement and no Material Litigation will have been filed or commenced and then be pending;

(d) Each delivery contemplated by Sections 2.3(b) and 2.3(c) will have been delivered;

(e) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected; and

(f) Simultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contracts .

8.4 No Frustration of Closing Conditions . None of Company, Independent Fiduciary or Insurer may rely on the failure of any condition to its obligation to consummate the Transactions in Section 8.1 , 8.2 or 8.3 , as the case may be, to be satisfied if such failure was caused by such Party's or its Affiliates' breach of its representations, warranties or covenants under this Agreement.

ARTICLE IX
INDEMNIFICATION FOR THIRD PARTY CLAIMS

9.1 Indemnification by Insurer . From and after the Closing, Insurer agrees to indemnify, defend and hold Company, the Plans, Independent Fiduciary and any other Person acting as fiduciary or agent for the Plans and their respective Affiliates, officers, directors, stockholders, employees, agents and other Representatives (each, an " Indemnified Party ") harmless from and against any and all Liabilities (in each case, including reasonable out-of-pocket expenses and reasonable fees and expenses of counsel) to the extent arising out of or relating to the portion of any action, lawsuit, proceeding, investigation, demand or other claim against the Indemnified Party by a third party that is threatened or brought against or that involves an Indemnified Party and that arises out of or

relates to any failure, or alleged failure, by Insurer to perform or comply with the terms of the Group Annuity Contract, including making the payments in respect of the Covered Lives, Contingent Lives

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or Beneficiaries to be made pursuant to the Group Annuity Contract (collectively, " Indemnified Claims "). If the Closing occurs after the Outside Date, Indemnified Claims will not, however, include any failure, or alleged failure, of any such payments in respect of the Covered Lives, Contingent Lives or Beneficiaries for a reason other than Insurer's actual failure to make a timely Aggregate Monthly Payment (as defined in the Group Annuity Contract) under the Group Annuity Contract. For the avoidance of doubt, if the Closing does not occur, Insurer will have no obligations under this Section 9.1 .

9.2 Procedures for Indemnification Claims .

(a) Any Indemnified Party making a claim for indemnification for Indemnified Claims under Section 9.1 will notify Insurer of each Indemnified Claim in writing promptly after receiving notice of such, describing the Indemnified Claim, the amount thereof (if known and quantifiable) and the basis thereof in reasonable detail. However, an Indemnified Party's failure to notify Insurer will not relieve Insurer of its obligations under this Article IX except to the extent that (and only to the extent that) such failure caused or would reasonably be expected to cause the indemnifiable Liabilities to be greater than such Liabilities would have been had the Indemnified Party given Insurer prompt notice. This Section 9.2 and Section 9.1 will survive the Closing Date.

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(b) Insurer will have the right at any time to assume the defense against any Indemnified Claim with counsel of its choice reasonably satisfactory to the Indemnified Party and control the defense of such Indemnified Claim.

(c) From and after the date that Insurer has assumed and is conducting the defense of an Indemnified Claim in accordance with Section 9.2(b) , (i) each Indemnified Party may retain separate co-counsel at its sole cost and expense and participate in, but not control, the defense of such Indemnified Claim, (ii) each Indemnified Party may retain separate counsel at its sole cost and expense to control the defense of any portion of the action, lawsuit, proceeding, investigation, demand or other claim against the Indemnified Party that is not an Indemnified Claim (the " Uncovered Claim "), (iii) Insurer and the Indemnified Party will cooperate fully with each other and any of their respective counsel in connection with the defense, negotiation or settlement of any such Indemnified Claim or (if the Indemnified Party retains counsel for the Uncovered Claim) the Uncovered Claim, including providing access to any relevant books and records, properties, employees and Representatives, provided, however, that in no event will Insurer be responsible in any way for any Liabilities or Orders resulting such Uncovered Claim and provided further, for avoidance of doubt, the foregoing will not require any Person to waive, or take any action that has the effect of waiving, its attorney-client privilege, attorney work-product or any other applicable privilege with respect thereto, (iv) Insurer will not consent to the entry of any judgment on or enter into any settlement with respect to such Indemnified Claim without the Indemnified Party's prior written consent (which will not be unreasonably withheld, conditioned or delayed) unless the judgment or proposed settlement involves only the payment of money damages by Insurer and does not impose an injunction or other equitable relief on the Indemnified Party, or adversely impact the Plans' Tax Qualified status, or admit liability on the part of any Indemnified Party, (v) the Indemnified Party will not consent to the entry of any judgment or enter into any settlement with respect to such Indemnified Claim without Insurer's prior written consent (which will not be unreasonably withheld, conditioned or delayed) and (vi) the Indemnified Party may consent to the entry of any judgment or enter into any settlement with respect to the Uncovered Claim without Insurer's prior consent.

(d) If Insurer has not assumed the defense of an Indemnified Claim after receiving notice of the Indemnified Claim, (i) the Indemnified Party may defend against the Indemnified Claim in any manner it reasonably determines to be appropriate, (ii) Insurer will reimburse the Indemnified Party promptly and periodically for the costs of defending against the Indemnified Claim (including reasonable attorneys' fees and expenses allocable to such Indemnified Claim) to the extent such costs are Liabilities for which the Indemnified Party is entitled to indemnification under this Article IX and (iii) Insurer will remain responsible for any costs the Indemnified Party may incur resulting from the Indemnified Claim to the extent such costs are Liabilities for which the Indemnified Party is entitled to indemnification under this Article IX . If the Indemnified Party has not assumed the defense of an Uncovered Claim as contemplated by Section 9.2(c) , Insurer is not responsible in any way for any Liabilities or Orders resulting from not responding to or defending such Uncovered Claim, provided that Insurer's responsibility for Indemnified Claims will not be altered in any way.

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(e) Notwithstanding anything in this Agreement to the contrary, as between Independent Fiduciary and Company, this Article IX will not be deemed to supersede or extinguish any rights of Independent Fiduciary or Company pursuant to the IF Engagement Letter.

9.3 Claims, Payment and Treatment of Payments . On each occasion that any Indemnified Party is entitled to indemnification under this Article IX , Insurer will, at each such time, promptly pay the amount of such indemnification within ten Business Days following receipt of an invoice for out-of-pocket expense, fees or other amounts for which it is liable under this Article IX . Any indemnification payments made to the Plans pursuant to this Agreement will be treated solely for tax purposes as an adjustment to the premium for the Group Annuity Contract, unless otherwise required by applicable Law.

ARTICLE X
TERMINATION

10.1 Termination of Agreement . This Agreement may be terminated at any time prior to the Closing as provided below:

(a) By the mutual written consent of Company and Insurer;

(b) By Company if the Closing has not occurred by or on [* * *] (the " Outside Date ") or any state of facts or circumstances exists as a result of which there is no reasonable probability that the Closing can occur by or on the Outside Date, provided that such right to terminate this Agreement will not be available to Company if any failure of Company to perform any of its obligations under this Agreement required to be performed at or prior to the Closing has been the cause of, or resulted in, the failure of the Closing to occur on or before the Outside Date and such action or failure to perform constitutes a breach of this Agreement;

(c) By Company if there has been a misrepresentation or breach of any representation, warranty, covenant or agreement on the part of Insurer or Independent Fiduciary contained in this Agreement such that any of the conditions set forth in Sections 8.1(a) or 8.1(b) would not be satisfied, and which will not have been cured prior to 20 Business Days following notice of such misrepresentation or breach to Insurer or Independent Fiduciary, as applicable;

(d) By Insurer if the Closing has not occurred by or on the Outside Date or any state of facts or circumstances exists as a result of which there is no reasonable probability that the Closing can occur by or on the Outside Date, provided that such right to terminate this Agreement will not be available to Insurer if any action of Insurer or the failure of Insurer to perform any of its obligations under this Agreement required to be performed at or prior to the Closing has been the cause of, or resulted in, the failure of the Closing to occur on or before the Outside Date and such action or failure to perform constitutes a breach of this Agreement; and

(e) By Insurer if there has been a misrepresentation or breach of any representation, warranty, covenant or agreement on the part of Company or Independent Fiduciary contained in this Agreement such that any of the conditions set forth in Sections 8.2(a) or 8.2(b) would not be satisfied, and which will not have been cured prior to 20 Business Days following notice of such misrepresentation or breach to Company or Independent Fiduciary, as applicable.

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10.2 Effect of Termination and Survival . If this Agreement is terminated pursuant to Section 10.1 , all rights and obligations of the Parties under this Agreement will terminate upon such termination and will become null and void, except that Sections 1.1 , 3.11 , 4.6 and 5.14 , Article XI and this Section 10.2 will survive any such termination and no Party will otherwise have any Liability to any other Party under this Agreement. However, nothing in this Section 10.2 will relieve any Party from Liability for any fraud or willful and material breach of this Agreement.

10.3 Extension .

(a) If the Closing is not reasonably expected to occur on or prior to the Outside Date, Company may deliver a request to Insurer on or before 5:00 p.m. Eastern Time on the Outside Date that the Outside Date be extended (a " Notice of Extension "), in which case the Outside Date will be deemed to be extended to [* * *].

(b) If Company timely delivers a Notice of Extension to Insurer, the Parties may agree to one of the following:

(i) Preserve the existing deal terms in place as of [* * *].

(ii) Insurer will use its Commercially Reasonable Efforts to deliver to Company and Independent Fiduciary a written, good-faith revision of the [* * *] and Base Annuity Premium by [* * *] (a " Re-Pricing Offer "), [* * *]. Company will deliver a written response to Insurer either accepting or rejecting the Re-Pricing Offer within ten Business Days following Insurer's delivery of the Re-Pricing Offer to Company. If Company accepts the Re-Pricing Offer, the Parties will set a new Target Closing Date as soon as reasonably practicable and cooperate in good faith for a period of ten Business Days to negotiate any amendments to this Agreement, the Ancillary Agreements and the Workbook necessary to implement the Re-Pricing Offer. If the Company rejects the Re-Pricing Offer or the Parties do not agree on amendments necessary to implement the Re-Pricing Offer within the time frame in this Section 10.3(b) , this Agreement will immediately terminate.

(iii) An alternative approach mutually agreeable to both Insurer and Company.

For the avoidance of doubt, the consummation of the transactions based on this Section 10.3(b) will be subject to the confirmation by Independent Fiduciary that the Transactions continue to satisfy the ERISA Requirements.

(c) If the Parties are unable to mutually reach terms to proceed with a Closing, this Agreement will immediately terminate.

ARTICLE XI
MISCELLANEOUS

11.1 Expenses . Except as otherwise expressly set forth in this Agreement, each Party will bear its own costs and expenses incurred in connection with this Agreement and the Transactions,

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including all fees of law firms, commercial banks, investment banks, accountants, public relations firms, experts and consultants.

11.2 Entire Agreement . This Agreement and the Ancillary Agreements constitute the entire agreement among the Parties and supersede any prior understandings, agreements or representations (whether written or oral) by, among or between the Parties, written or oral, to the extent they relate in any way to the subject matter of this Agreement. Notwithstanding the foregoing, the IF Engagement Letter will not be superseded by this Agreement or the Ancillary Agreements and nothing in this Agreement will affect the terms or enforceability of the Group Annuity Contract.

11.3 Amendments and Waivers . No amendment of this Agreement or the Ancillary Agreements will be valid unless it is agreed to in writing and signed or acknowledged by each Party, except as expressly provided in this Agreement. No waiver of any breach of this Agreement will be construed as an implied amendment or agreement to amend or modify any provision of this Agreement. No waiver by any Party of any default, misrepresentation or breach of warranty or covenant under this Agreement, whether intentional or not, will be valid unless it is agreed to in writing and signed or acknowledged by the Party making such waiver, nor will such waiver be deemed to extend to any prior or subsequent default, misrepresentation or breach of warranty or covenant under this Agreement or affect in any way any rights arising by virtue of any prior or subsequent default, misrepresentation or breach of warranty or covenant. No conditions, course of dealing or performance, understanding or agreement purporting to modify, vary, explain or supplement the terms or conditions of this Agreement will be binding unless this Agreement is amended or modified in writing pursuant to the first sentence of this Section 11.3 . Except where a specific period for action or inaction is provided in this Agreement, no delay on the part of any Party in exercising any right, power or privilege under this Agreement will operate as a waiver thereof.

11.4 Succession and Assignment . This Agreement will be binding on and inure to the benefit of the Parties and their respective successors and permitted assigns. No Party may assign either this Agreement or any of its rights, interests or obligations under this Agreement without the prior written consent of the other Parties, and any attempt to do so will be null and void *ab initio* , without any effect whatsoever.

11.5 Notices . All notices, requests, demands, claims, certifications and other communications under this Agreement will be in writing except as expressly provided in this Agreement. Any notice, request, demand, claim or other communication under this Agreement will be deemed duly given (a) when delivered personally to the recipient, (b) one Business Day after being sent to the recipient by reputable overnight courier service (charges prepaid), addressed as set forth below or (c) when transmitted, if sent by facsimile or electronic mail, to those indicated below (including the recipient):

If to Company:

PPG Industries, Inc.
One PPG Place

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Attention: Treasurer and General Counsel
Facsimile: 412.434.4416 and 412.434.2490
Email: jankowski@ppg.com and gbost@ppg.com

With copies (which will not constitute notice to Company) to:

K&L Gates LLP
210 Sixth Avenue
Pittsburgh, PA 15222
Attention: Charles R. Smith and Rikki A. Sapolich
Facsimile: 412.355.6501
Email: charles.smith@klgates.com and rikki.sapolich@klgates.com

If to Insurer:

Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01111
Attention: Keith McDonagh
Facsimile: 860.562.6210
Email: KMcDonagh@MassMutual.com

With a copy (which will not constitute notice to Insurer) to:

Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01111
Attention: General Counsel
Facsimile: 413.226.4270

Sidley Austin LLP
787 Seventh Avenue
New York, NY 10019
Attention: Jeff Liebmann and Dennis Manfredi
Facsimile: 212.839.5599
Email: jliebmann@sidley.com and dmanfredi@sidley.com

If to Independent Fiduciary:

State Street Global Advisors
One Lincoln Street
Boston, MA 02111
Attention: Denise Sisk
Facsimile: 617.946.9434
Email: denise_sisk@ssga.com

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With a copy (which will not constitute notice to Independent Fiduciary) to:

Groom Law Group
1701 Pennsylvania Avenue, N.W.
12 th Floor
Washington, DC 20006
Attention: Thomas Roberts
Facsimile: 202-659-4503
Email: troberts@groom.com

Any Party may change the address to which notices, requests, demands, claims and other communications under this Agreement are to be delivered by giving the other Parties notice in the manner set forth in this Section 11.5 .

11.6 Governing Law . Except to the extent preempted by applicable federal Law, this Agreement will be governed by, and construed in accordance with, the Laws of the State of New York, without regard to any principles of conflicts of law thereof that would permit or require the application of the Laws of another jurisdiction.

11.7 Submission to Jurisdiction and Service of Process .

(a) Each of the Parties irrevocably and unconditionally submits to the jurisdiction of any state or federal court, and only federal court if diversity of Parties exists, sitting in New York County, New York in any claim, counterclaim, demand, cause of action, controversy or dispute arising out of or relating to this Agreement or any Ancillary Agreement and agrees that all claims in respect of such Action may be heard and determined in any such court. Each Party also agrees not to bring any Action arising out of or relating to this Agreement or any Ancillary Agreement in any other court. Each of the Parties irrevocably and unconditionally waives any objection to personal jurisdiction, venue and any defense of inconvenient forum to the maintenance of any Action so brought and waives any bond, surety or other security that might be required of any other Party with respect thereto. Any Party may make service on any other Party by sending or delivering a copy of the process to the Party to be served at the address and in the manner provided for the giving of notices in Section 11.5 , provided that nothing in this Section 11.7 will affect the right of any Party to serve legal process in any other manner permitted by Law.

(b) Notwithstanding anything to the contrary in this Agreement, the Parties acknowledge and agree that in the course of any Action, if Insurer elects to, based on the opinion of counsel, produce or otherwise disclose [* * *], to Company, Independent Fiduciary or their respective Affiliates or Representatives (for the avoidance of doubt, nothing in this Agreement will obligate Insurer or any of its Affiliates or Representatives to make such disclosure), Company and Independent Fiduciary will consent to the filing of, and the Parties will use all reasonable efforts to move for and urge the court to adopt, a protective order implementing terms reasonably satisfactory to Insurer to limit the disclosure of [* * *] and ensure the strictly confidential treatment thereof, including requiring [* * *] or copies thereof following the conclusion of any such Action. However, neither Company nor Independent Fiduciary will be required to take any steps that would compromise its ability to prosecute or defend the Action or otherwise prejudice its position (including

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any restrictions on the ability of its experts to review, access and analyze any materials that Company (or Independent Fiduciary, as applicable) determines are relevant to such prosecution or defense). Further, Company and Independent Fiduciary agree that it will not be considered unreasonable for Insurer to seek a protective order that prevents disclosure of such information in such a way that it would be reasonably likely to become available to competitors of Insurer or other third parties not involved in any such Action.

11.8 Waivers of Jury Trial . EACH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY ACTION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT, THE ANCILLARY AGREEMENTS OR THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT.

11.9 Specific Performance . The Parties agree that irreparable damage would occur if any of the provisions of this Agreement or the Ancillary Agreements were not performed in accordance with their specific terms or were otherwise breached. Accordingly, each Party will be entitled to an injunction or injunctions to prevent breaches of this Agreement or any Ancillary Agreement by the breaching Party and to enforce specifically the terms and provisions of this Agreement or any Ancillary Agreement, in addition to any other remedy to which such Party is entitled at law or in equity. Without limiting the generality of the foregoing, the Parties acknowledge and agree that Insurer will be entitled to enforce specifically Independent Fiduciary's obligations in this Agreement to irrevocably direct Plan Trustee to act in accordance with this Agreement and the Ancillary Agreements. The Parties further agree that (a) by seeking the remedies provided for in this Section 11.9 , a Party will not in any respect waive its right to seek any other form of relief that may be available to such Party under this Agreement or any Ancillary Agreement (including monetary damages) if the remedies provided for in this Section 11.9 are not available or otherwise are not granted and (b) nothing in this Section 11.9 will require any Party to institute any Action for (or limit any Party's right to institute any Action for) specific performance under this Section 11.9 prior or as a condition to exercising any termination right under Article X , nor will the commencement of any Action pursuant to this Section 11.9 or anything in this Section 11.9 restrict or limit any Party's right to terminate this Agreement in accordance with Article X or pursue any other remedies under this Agreement that may be available then or thereafter.

11.10 Severability . The invalidity or unenforceability of any provision of this Agreement will not affect the validity or enforceability of any other provisions of this Agreement, provided that if any of the material provisions of this Agreement are held illegal, invalid or unenforceable, this entire Agreement will be null and void. If any of the provisions of this Agreement are held by a court or other tribunal of competent jurisdiction to be illegal, invalid or unenforceable, such provisions will be limited or eliminated only to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect.

11.11 No Third Party Beneficiaries . This Agreement will not confer any rights or remedies on any Person other than the Parties and their respective successors and permitted assigns.

11.12 Counterparts and Facsimile and Electronic Signatures . This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which

together will constitute one and the same instrument. This Agreement or any counterpart may be executed and delivered to the recipients in Section 11.5 by electronic communications by portable document format (.pdf), each of which will be deemed an original.

11.13 Survival of Representations and Warranties . The representations and warranties of the Parties will survive the Closing until the expiry of the relevant statute of limitations for contractual claims under the Laws of the State of New York.

11.14 Confidentiality .

(a) It is understood that each Party has received and will receive Confidential Information from the other Parties in connection with the negotiation of this Agreement and the Ancillary Agreements as well as in previous discussions and interactions involving the matters addressed by this Agreement and the Ancillary Agreement. Except as set forth in this Agreement (including except as expressly permitted or contemplated by the other provisions of this Agreement), the Parties will not use the Confidential Information of another disclosing Party except in connection with the performance of their respective obligations under this Agreement and will not disclose (and will cause their respective Representatives, Affiliates and Affiliates' Representatives not to disclose) any Confidential Information received from another Party, the Plans or their respective Representatives, Affiliates or Affiliates' Representatives, except to such receiving Party's Representatives, Affiliates and Affiliates' Representatives, who have a need to know (which for the avoidance of doubt, will not include Other Insurer, provided, however, that information related to the Group Annuity Contract or Annuity Certificates is permitted to be shared with Other Insurer and Insurer and Company will take such further actions as are reasonably necessary to ensure that such sharing of information is in compliance with applicable privacy Laws) and have agreed to maintain the confidentiality of Confidential Information in accordance with this Section 11.14 (or are otherwise bound). The disclosing Party is and will be an express third party beneficiary of such agreement by such receiving Party's Representatives, Affiliates and Affiliates' Representatives.

(b) Section 11.14(a) will not apply with respect to Confidential Information that the receiving Party can demonstrate is or was:

(i) Already known to the receiving Party or its Affiliates or Representatives prior to the confidential disclosure by the disclosing Party or any of its affiliates or Representatives, other than through a breach of an obligation of confidentiality of the disclosing Party of which the receiving Party is aware;

(ii) Independently developed by the receiving Party or its Affiliates or Representatives not in violation or breach of this Agreement or any other confidentiality obligation to the disclosing Party (such as the Confidentiality Agreements or any retention agreement with a firm or professional in connection with this Agreement);

(iii) Already known to the public without breach of confidence by the receiving Party or any of its Affiliates;

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(iv) Received by the receiving Party from a third party without restrictions on its use in favor of the disclosing Party, whether by Law or Contract; or

(v) Subject to prior compliance with Section 11.14(c) , required to be disclosed pursuant to any applicable Law, stock exchange regulation, regulatory agreement, provision or request, court order, subpoena or other legal process.

(c) Section 11.14(a) will not apply from and after the Closing to restrict the use or disclosure by Insurer of any Confidential Information related to Priced Lives, Annuity Payments or [* * *] received from another disclosing Party, provided that Insurer will use such Confidential Information only in compliance with all applicable Laws relating to privacy of personally identifying information. For the avoidance of doubt, this Section 11.14(c) does not apply to Confidential Information regarding Company or the Plans (other than to the extent required in connection with the Group Annuity Contract).

(d) Except as otherwise provided in this Agreement, if any Party, its Representatives, its Affiliates or its Affiliates' Representatives receives a request, subpoena, demand or order for disclosure or becomes required by Law or stock exchange rule or regulation to disclose any Confidential Information (a " Compelled Disclosing Party "), such Compelled Disclosing Party will promptly, and in no case more than five Business Days following receipt of such a request, subpoena, demand or order (so long as it is (i) permitted by Law or by such request, subpoena, demand or Order of a Governmental Authority to provide such notification and (ii) not contrary to any applicable request, demand or order of, or agreement with, a Governmental Authority), notify the other Parties to afford them the opportunity to object or seek a protective order or other remedy, including a protective order requiring Confidential Information to be submitted under seal and for the return and destruction of Confidential Information or copies thereof following the conclusion of any Action, prior to the disclosure of any such Confidential Information. The Compelled Disclosing Party will, to the extent (i) permitted by Law or by such request, subpoena, demand or Order of a Governmental Authority requiring the disclosure of Confidential Information and (ii) not contrary to any applicable request, demand or order of, or agreement with, a Governmental Authority, cooperate with the other Party's efforts to obtain such protective order at such other Party's cost and expense. If such protective order or other remedy is not sought or obtained, only that portion of Confidential Information that the Compelled Disclosing Party in good faith believes is legally required to be provided may be disclosed and such Compelled Disclosing Party will request that appropriate confidential treatment will be accorded to such Confidential Information.

(e) Any engagement letter between any of the Parties on the one hand and each professional engaged in connection with this Agreement on the other will include undertakings by such professional to maintain the confidentiality of Confidential Information in accordance with this Section 11.14 and to clearly mark any reports or other work product prepared in connection with such engagement as confidential and not subject to disclosure except as permitted by this Section 11.14 .

(f) Insurer will comply with all applicable Laws and regulations, including those laws relating to privacy, data protection and the safeguarding of such information, governing the confidential information of any Covered Life, Contingent Life or Beneficiary.

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(g) The Parties acknowledge and agree that this Section 11.14 will supersede the Confidentiality Agreements. Notwithstanding the foregoing, this Section 11.14(g) will not relieve any party from Liability for breaches of the Confidentiality Agreement that have occurred prior to the date of this Agreement.

11.15 Waiver of Punitive Damages . To the fullest extent permitted by Law, and notwithstanding any other provision of this Agreement, none of the Parties will be liable to any other Party for any punitive or exemplary damages of any nature in respect of matters arising out of this Agreement or the Ancillary Agreements, whether arising out of breach of contract, negligence, tort, strict liability or any other legal or equitable principle. The foregoing sentence will not preclude recovery of amounts claimed in an Indemnified Claim to the extent that claims for such amounts are brought by a third party and subject to indemnification under this Agreement.

11.16 Intellectual Property .

(a) Insurer is, and the other Parties acknowledge that Insurer is, the sole owner of all spreadsheets and formulas, including the methodologies reflected on the spreadsheets and manuals on the Identified USB Flash Drive and that all such materials (collectively, the " IP Materials ") constitute Insurer's valuable and proprietary know-how. The foregoing remains true even with respect to any IP Materials or know-how incorporated or reproduced in the work product of any arbitrator or its staff or any other professional engaged in connection with this Agreement. In furtherance of the foregoing, Company and Independent Fiduciary assign to Insurer all right, title and interest that such Party has or may have in any IP Materials, and any intellectual property rights therein and thereto, conceived, invented, authored or reduced to practice in connection with this Agreement and the Ancillary Agreements. For the avoidance of doubt, neither Company nor Independent Fiduciary assigns, conveys or impairs any right to the IP Materials that any other Person may have or assert. Insurer grants Independent Fiduciary, Company and, pursuant to the applicable engagement letter, if any, any arbitrator or its staff or any other professional engaged in connection with this Agreement, the limited, non-exclusive, non-transferable, royalty-free right, on an as-is, where-is basis, to use such IP Materials solely in connection with the Transactions and proceedings contemplated by this Agreement and the Ancillary Agreements. No Person having use of such information will have any rights in connection with such information except as specifically granted by the foregoing sentence.

(b) The Parties agree that, other than as provided in Section 11.16(a) , Company takes no position as to the portion of the IP Materials that may be owned by Insurer or Company or any other Person or as to whether Section 11.14(b) is applicable or not applicable to all or any portion of the IP Materials (and does not waive any of its rights under Section 11.14(b)). Further, Insurer agrees that it will, in good faith, attempt to avoid involving Company in any action related to enforcement against any other Person of any intellectual property or confidentiality rights with respect to the IP Materials.

[Remainder of page intentionally left blank]

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IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

By: /s/ Wayne Daniel
Name: Wayne Daniel
Title: SVP, US Pensions

PPG INDUSTRIES, INC.

By: /s/ John A. Jankowski
Name: John A. Jankowski
Title: Vice President and Treasurer

STATE STREET BANK AND TRUST COMPANY , acting solely in its capacity as Independent Fiduciary of the Plans

By: /s/ Denise Sisk
Name: Denise Sisk
Title: Managing Director

[SIGNATURE PAGE TO DEFINITIVE PURCHASE AGREEMENT]

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EXHIBIT 2.2

DEFINITIVE PURCHASE AGREEMENT

BY AND AMONG

PPG INDUSTRIES, INC.,

STATE STREET BANK AND TRUST COMPANY AND

METROPOLITAN LIFE INSURANCE COMPANY

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CONFIDENTIAL TREATMENT REQUESTED BY PPG INDUSTRIES, INC.

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DEFINITIVE PURCHASE AGREEMENT

This Definitive Purchase Agreement (this " Agreement ") is entered into as of June 24, 2016 (the " Signing Date ") by and among Metropolitan Life Insurance Company, a New York life insurance company (" Insurer "), PPG Industries, Inc., a Pennsylvania corporation (" Company "), acting solely in a non-fiduciary capacity as the sponsor of the PPG Industries, Inc. Retirement Plan A, the PPG Industries, Inc. Retirement Plan B, the PPG Industries, Inc. Retirement Plan C, the PPG Industries, Inc. Retirement Plan E and the PPG Industries, Inc. Retirement Plan F (the " Plans "), and State Street Bank and Trust Company, a Massachusetts trust company, for the purposes of this Agreement, acting through State Street Global Advisors, a division of State Street Bank and Trust Company , solely in its capacity as the independent fiduciary of the Plans with certain authority and responsibility to represent the Plans and their Plan Participants and Plan Beneficiaries in regard to the Transactions (" Independent Fiduciary "). Insurer, Company and Independent Fiduciary are referred to collectively in this Agreement as the " Parties ."

RECITALS

A. Company, as sponsor of the Plans, has amended the Plans to require that Liabilities under the Plans for certain participants currently receiving benefits under the Plans be transferred to a licensed insurance company, and that such insurance company fully and irrevocably guarantee benefits in accordance with one or more group annuity contracts.

B.

In furtherance of the foregoing, Insurer wishes to issue to Company the Group Annuity Contracts on the terms and subject to the conditions set forth in this Agreement and in the Group Annuity Contracts.

C.

Company and Independent Fiduciary desire to proceed with the Plans' purchase and Company's receipt of the Group Annuity Contracts from Insurer.

D.

Independent Fiduciary has determined that the Plans' purchase of the Group Annuity Contracts as provided for in, and subject to the terms of, this Agreement satisfies the ERISA Requirements.

E.

The Parties wish to enter into this Agreement to provide for the purchase and the issuance of the Group Annuity Contracts by Insurer to Company and certain related transactions and agreements.

F.

Company is entering into this Agreement and any Ancillary Agreements to which it is a party, and undertaking the actions contemplated by each, solely in a non-fiduciary capacity as plan sponsor of the Plans.

G.

Independent Fiduciary is entering into this Agreement and any Ancillary Agreements to which it is a party, and undertaking the actions contemplated by each, solely in its capacity as a named fiduciary for purposes of the selection of an insurance company, the negotiation of the terms of group annuity contracts and the negotiation of the terms of this Agreement and any Ancillary Agreements to which it is a party.

H.

Contemporaneously with the execution of this Agreement, Independent Fiduciary, Plan Trustee and Insurer have entered into the Plan Trustee Agreement (the " Plan Trustee Agreement ") and delivered a duly executed copy of such agreement to Company.

NOW, THEREFORE, in consideration of the mutual promises made in this Agreement, and in consideration of the representations, warranties and covenants contained in this Agreement, the Parties agree as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

1.1 Definitions . For purposes of this Agreement:

[* * *]

" Action " means any claim, action, suit, arbitration, complaint, charge, investigation, inquiry or proceeding by or before any Governmental Authority.

" Administrative Services Agreement " means the Administrative Services Agreement between Insurer and Other Insurer in substantially the same form as Schedule 1.1(b) .

" Affiliate " of any particular Person means any other Person controlling, controlled by or under common control with such particular Person. For the purposes of this definition, "controlling," "controlled" and "control" means the possession, directly or indirectly, of the power to direct the management and policies of a Person whether through the ownership of voting securities, Contract or otherwise.

" Agreement " is defined in the preamble.

" Alternative Arrangement " is defined in Section 6.4(c) .

" Alternative Transaction Proposal " means any proposal or offer relating to the entry into an insurance, reinsurance or other transaction similar to the purchase and issuance of the Group Annuity Contracts contemplated by this Agreement that would be reasonably likely to replace, frustrate or cause not to occur the Transactions in respect of the Covered Lives or Contingent Lives, including any transaction in which the responsibility to make all or any substantial portion of the payments in respect of pension obligations owed to the Covered Lives or Contingent Lives would be transferred, assigned or novated from the Plan Trust to a non-affiliated Person or in which a non-

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affiliated Person would assume an obligation to indemnify or reimburse the Plan Trust, Company or any of their respective Affiliates for any such payment. An "Alternative Transaction Proposal" will not, however, include (a) any insurance, reinsurance or other transaction that does not relate to the Covered Lives, Contingent Lives or Beneficiaries or (b) the Other Group Annuity Contract and any definitive purchase agreement executed by Other Insurer, Company and Independent Fiduciary with respect to the Other Group Annuity Contract (but only to the extent that the Other Group Annuity Contract and such definitive purchase agreement are not intended to replace any part of the Group Annuity Contracts or this Agreement .

" Ancillary Agreements " means the Group Annuity Contracts, [* * *], Bill of Sale, Plan Trustee Direction Letter, Plan Trustee Agreement and all other written agreements, documents or certificates to be delivered by a Party at the Closing.

" Annuity Benefits Correspondence Center " is defined in Section 7.3(a) .

" Annuity Certificate " means an annuity certificate evidencing coverage under the Group Annuity Contracts, substantially in the applicable forms attached as Schedules 1.1(c) and 1.1(d) , with such modifications as may be made by Insurer as necessary to satisfy the requirements of any generally applicable Law.

" Annuity Commencement Date " means [* * *].

" Annuity Exhibit Error " has the meaning ascribed to such term in the Group Annuity Contracts.

" Annuity Exhibits " means the annuity exhibits attached to the Group Annuity Contracts, in substantially the same form attached to Schedules 1.1(e) and 1.1(f) , as amended and supplemented pursuant to the Group Annuity Contracts.

" Annuity Payment " has the meaning ascribed to such term in the Group Annuity Contracts.

" Arbitration Dispute " is defined in Section 2.9(b) .

" ASC 715 " means Accounting Standards Codification Section 715: Compensation-Retirement Benefits.

" Asset Portfolio " means, with respect to each Group Annuity Contract, [* * *].

[* * *] is defined in Section 2.16 .

" Base Annuity Premium " is defined in the Spreadsheet on the Premium Calculation Tab.

" Base File " means the data [* * *] in the file titled [* * *] that was uploaded by Company to the Data Room on [* * *].

" Beneficiary " has the meaning ascribed to such term in the Group Annuity Contracts.

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" Business Day " means any weekday on which banks in New York City, New York are open for business.

" Bill of Sale " means the bill of sale in the form attached as Schedule 1.1(g) .

" Cash " means currency of the United States of America or wire transfers thereof that is legal tender for payment of all public and private debts.

[* * *]

" Closing " is defined in Section 2.2(a) .

" Closing Annuity Exhibits " is defined in Section 2.5(a)(iii) .

" Closing Data Cut-Off Date " means the day that is 22 Business Days prior to the Target Closing Date.

" Closing Data File " is defined in Section 2.5(a)(i) .

" Closing Date " is defined in Section 2.2(a) .

" Closing Date Asset Portfolio Full Market Value " is defined in Section 2.5(b) .

" Closing Date Cash Amount " is defined in Section 2.5(d)(i) .

" Closing Date Consideration " for each Group Annuity Contract will equal [* * *]. [* * *]

[* * *]

" Code " means the Internal Revenue Code of 1986, as amended, and the applicable Treasury Regulations issued thereunder.

" Commercially Reasonable Efforts " means, with respect to the efforts to be expended by a Party with respect to any objective under this Agreement, reasonable, diligent, good faith efforts to accomplish such objective as a similarly situated Person would normally use to accomplish a similar objective as expeditiously as reasonably possible under similar circumstances exercising reasonable business judgment. Notwithstanding the foregoing, "Commercially Reasonable Efforts" will not require a Person to make payments to unaffiliated third parties (other than in respect of the fees and expenses of such Person's counsel and other advisors), to incur non-de minimis Liabilities to unaffiliated third parties or to grant any non-de minimis concessions or accommodations.

" Committee " means Company's Benefits Investment Committee.

" Company " is defined in the preamble.

" Company Disclosure Letter " means the disclosure letter as delivered by Company to the other Parties immediately prior to the execution of this Agreement.

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" Company Provided Component " means any component incorporated into the calculation of the Closing Date Cash Amount and [* * *] (including the information provided pursuant to Section 2.16), including data necessary for the calculation of the Interim Post-Closing [* * *] Amount and the Final [* * *] Amount not calculated, determined or provided by Insurer.

" Company's Knowledge " means the actual knowledge of any officer of Company responsible for the day-to-day administration or oversight of the Plans or directly involved in the negotiation of this Agreement or the Transactions, in each case, after making appropriate inquiry of those people reporting directly to such officer who have substantial responsibility for the relevant subject matter and, if none of such officers or people reporting directly to them have substantial responsibility for the relevant subject matter, then after making appropriate inquiry of Company's officers with substantial responsibility for such subject matter.

" Compelled Disclosing Party " is defined in Section 11.14(d) .

" Confidential Information " means all business and technical information or processes, stored in any medium, to the extent the same is reasonably construed or generally accepted as containing a trade secret, proprietary or confidential information of or belonging to any Party, its Representatives, its Affiliates or its Affiliates' Representatives, including know-how and trade secrets, customer or client requirements and lists, [* * *], technology, software and data processing procedures, insurance, actuarial, accounting and financial data, management systems, records and any other information that is designated as confidential and the portions of any reports or other documents prepared by any professional engaged in connection with this Agreement and any report or other document prepared by a receiving Party that contains or incorporates a trade secret, proprietary or confidential information of a disclosing Party. Confidential Information includes information communicated orally, in writing or in any other recorded or tangible form, information supplied by the disclosing Party and information delivered prior to the Signing Date pursuant to the Confidentiality Agreements. Information received by the receiving Party containing trade secrets or proprietary or confidential information constitutes Confidential Information.

" Confidentiality Agreements " means, collectively, (a) the confidentiality agreements, dated December 2015 and June 7, 2016, between Company and Insurer and (b) the Confidentiality Agreement, dated March 14, 2016, between Company and Independent Fiduciary.

" Consent " means any consent, approval (or deemed approval after the expiry of all appropriate waiting periods), authorization, notice, filing, permission or waiver.

" Contingent Life " has the meaning ascribed to such term in the Group Annuity Contracts.

" Contract " means any legally enforceable agreement, contract, commitment, instrument, undertaking, lease, note, mortgage, indenture, license or arrangement, whether written or oral.

" Contractholder " has the meaning ascribed to such term in the Group Annuity Contracts.

" Covered Life " has the meaning ascribed to such term in the Group Annuity Contracts.

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[* * *]

" Credit Rating Agencies " means each of Standard & Poor's Rating Services, a division of The McGraw-Hill Companies, Inc., Moody's Investors Service, Inc. and Fitch Ratings Ltd., and their respective successors.

" Data Room " means Merrill Datasite virtual data room entitled "Project New Day."

" Deferred Closing Date " is defined in Section 2.2(b) .

" Dry-Run Calculation Delivery Date " means [* * *].

" Dry-Run Cash Payment Amount " is defined in Section 2.6(c)(i) .

" Dry-Run Date Asset Portfolio Full Market Valuate " is defined in Section 2.6(b) .

" Enforceability Exceptions " is defined in Section 3.2 .

" ERISA " means the Employee Retirement Income Security Act of 1974, as amended, and any federal agency regulations promulgated thereunder.

" ERISA Requirements " means the requirements of ERISA and guidance promulgated thereunder applicable to the Transactions, including Interpretive Bulletin 95-1.

[* * *]

[* * *] is defined in Section 2.12 .

" Final Annuity Exhibits " is defined in Section 2.8(b)(iii) .

" Final [* * *] Amount " is defined in Section 2.8(d)(i) .

" Final Data Cut-Off Date " means the day that is 111 Business Days after the Closing Date.

" Final Data File " is defined in Section 2.8(a) .

" Final Date Consideration " is [* * *].

" GAAP " means United States generally accepted accounting principles and practices in effect from time to time applied consistently throughout the periods involved.

" Governmental Approval " means any Consent of a Governmental Authority.

" Governmental Authority " means any federal, state, municipal, foreign or local government or quasi-governmental authority or any regulatory or administrative body, department, agency, insurance commission or commissioner, subdivision, court or other tribunal, arbitrator or arbitral body of any of the foregoing.

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" Group Annuity Contracts " means the Salaried Group Annuity Contract and the Wage Group Annuity Contract established in connection with a commingled separate account.

" Group Annuity Contracts Issuance " is defined in Section 2.1 .

" Identified USB Flash Drive " means the USB Flash Drive or any other delivery mechanic agreed to by the Parties containing, collectively, the Spreadsheet and the Base File. Such USB Flash Drive will have been delivered by Insurer to Company on the Signing Date, or as promptly as practical thereafter.

" IF Engagement Letter " means the engagement letter, dated March 14, 2016, by and between the Committee and Independent Fiduciary.

" Indemnified Claims " is defined in Section 9.1 .

" Indemnified Party " is defined in Section 9.1 .

" Independent Fiduciary " is defined in the preamble.

" Independent Fiduciary MAC " means (a) the occurrence of a material adverse change, as determined in Independent Fiduciary's sole discretion, in or directly affecting Insurer subsequent to the Signing Date that would cause the selection of Insurer and the purchase of the Group Annuity Contracts to fail to satisfy the ERISA Requirements or (b) the occurrence of a change in the ERISA Requirements after the Signing Date that would cause the selection of Insurer and the Plans' purchase of the Group Annuity Contracts to fail to satisfy the ERISA Requirements.

" Insurer " is defined in the preamble.

" Insurer Provided Component " means any component incorporated into the calculation of the Closing Date Cash Amount and [* * *] (including the information provided pursuant to Section 2.16), including data necessary for the calculation of the Interim Post-Closing [* * *] Amount and the Final [* * *] Amount not calculated, determined or provided by Company.

" Insurer's Knowledge " means the actual knowledge of any officer of Insurer who will be responsible for the day-to-day administration of the Group Annuity Contracts or was directly involved in the negotiation of this Agreement or the Transactions, in each case, after making appropriate inquiry of those people reporting directly to such officer who have substantial responsibility for the relevant subject matter and, if none of such officers or people reporting directly to them have substantial responsibility for the relevant subject matter, then after making appropriate inquiry of the officers of Insurer with substantial responsibility for such subject matter.

" Interim Post-Closing Annuity Exhibits " is defined in Section 2.7(b)(iii) .

" Interim Post-Closing Consideration " is defined in Section 2.7(a) .

" Interim Post-Closing Data Cut-Off Date " means the day that is 47 Business Days after the Closing Date.

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" Interim Post-Closing Data File " is defined in Section 2.7(a) .

" Interim Post-Closing [* * *] Amount " is defined in Section 2.7(d)(i) .

" Interpretive Bulletin 95-1 " means the U.S. Department of Labor's interpretive bulletin codified at 29 C.F.R. 2509.95-1.

" IP Materials " is defined in Section 11.16(a) .

" Law " means any federal, state, foreign or local law, statute, ordinance, regulation, rule or Order of any Governmental Authority.

" Liability " means any direct or indirect liability, debt, obligation, commitment, guaranty, claim, loss, damage, deficiency, penalty, fine, cost or expense of any kind, whether relating to payment, performance or otherwise, known or unknown, fixed, absolute or contingent, accrued or unaccrued, matured or unmatured, disputed or undisputed, liquidated or unliquidated, secured or unsecured, joint or several, due or to become due, vested or unvested, executory, determined, determinable or otherwise, whenever and however arising (including whether or not required to be reflected or reserved under GAAP on the financial statements of the obligor or responsible Person).

" Material Litigation " means any Action that is initiated against Company, the Plans, Insurer or any fiduciary of the Plans (including Independent Fiduciary) by a Governmental Authority that seeks to enjoin the consummation of the Transactions or that otherwise asserts that the Transactions violate applicable Law.

" PPG Benefits Center " is defined in Section 7.3(b) .

" Non-Exempt Prohibited Transaction " means a transaction prohibited by ERISA § 406 or Code § 4975, for which no statutory exemption or U.S. Department of Labor class exemption is available.

" Notice of Extension " is defined in Section 10.3(a) .

" Order " means any order, award, decision, injunction (preliminary or otherwise), judgment, ruling, decree, writ, subpoena or verdict entered, issued, made or rendered by any Governmental Authority or arbitrator.

" Other Group Annuity Contract " means the group annuity contract to be executed by Other Insurer and Company on the Closing Date with respect to the Priced Lives.

" Other Insurer " means Massachusetts Mutual Life Insurance Company, a Massachusetts life insurance company.

" Outside Date " is defined in Section 10.1(b) .

" Parties " is defined in the preamble.

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" Payment at Close " means, for each Group Annuity Contract, (a) the assignment, transfer and delivery by Plan Trustee to Insurer of the Transferred Assets and (b) the payment by Plan Trustee to Insurer of an amount in Cash equal to the Closing Date Cash Amount.

" Permitted Liens " means (a) any Liens created by operation of Law in respect of restrictions on the transfer of securities (other than restrictions relating to the transfer of the Transferred Assets at Closing, unless such transfer complies with such applicable Law) or (b) any transfer restrictions or other limitations on assignment, transfer or the alienability of rights under any indenture, debenture or other similar governing agreement to which such assets are subject (other than restrictions relating to the transfer of an asset at Closing, unless such transfer does not violate any such restriction).

" Person " means any individual, corporation, limited liability company, partnership, sole proprietorship, joint venture, trust, estate, association, organization, labor union, Governmental Authority or other entity.

" Plan Trustee Direction Letter " means Independent Fiduciary's direction to Plan Trustee in substantially the form attached as Schedule 1.1(h)] .

" Plans " is defined in the preamble.

" Plan Asset " means an asset of the Plans within the meaning of ERISA.

" Plan Beneficiary " means a person designated (a) by a current or former Plan Participant, (b) by a domestic relations order that satisfies the qualification requirements in ERISA § 206(d)(3) and Code § 401(a)(13)(B) or (c) by the terms of the Plans to become entitled to receive a pension benefit from the Plans that is eligible pursuant to the Plans' terms to be provided through the Group Annuity Contracts.

" Plan Governing Documents " means the Plans and any documents and instruments governing the Plans as contemplated under ERISA § 404(a)(1)(D).

" Plan Participant " means a person who is eligible to receive, and is receiving, a pension benefit from the Plans that is eligible pursuant to the Plans' terms to be provided through the Group Annuity Contracts.

" Plan Representative " means the Person, other than Independent Fiduciary, designated by the Committee or its designee to perform the particular tasks described in this Agreement.

" Plan Trust " means the Amended and Restated Defined Benefit Plan Master Trust Agreement by and between Company and The Bank of New York Mellon effective June 30, 2015.

" Plan Trustee " means The Bank of New York Mellon, in its capacity as the directed trustee of the Plan Trust.

" Plan Trustee Agreement " is defined in the recitals.

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[* * *]

" Priced Lives " means all Plan Participants and Plan Beneficiaries who are referenced in [* * *].

" RBC Ratio " means the company action level risk-based capital ratio of Insurer, which will be calculated in a manner consistent with the requirements and methodologies prescribed under New York Law, as applied by Insurer in the ordinary course of its business, consistent with its historic practice.

" Representatives " means, in respect of any Person that is an entity, such Person's officers, directors, employees, advisors and agents.

" Re-Pricing Offer " is defined in Section 10.3(b) .

" Salaried Group Annuity Contract " means the single premium, non-participating group annuity contract, and all exhibits thereto, substantially in the form attached as Schedule 1.1(c) for participants in the Plans who were classified as salaried employees by Company.

" SEC " means the Securities and Exchange Commission.

" Signing Date " is defined in the preamble.

" Spreadsheet " means the Excel file titled [* * *] that was delivered by Insurer to Company in an email from [* * *] to [* * *] at [* * *] on [* * *] and confirmed by Company as final in an email from [* * *] to [* * *] at [* * *] on [* * *].

" Target Closing Date " means [* * *] or such other date on or prior to the Outside Date that Insurer, Company and Independent Fiduciary may mutually agree.

" Tax Qualified " means qualified by the Code for preferential tax treatment under Code §§ 401(a) and 501(a).

[* * *]

" Transactions " means the transactions contemplated by this Agreement and the Ancillary Agreements, including any payment pursuant to Sections 2.7 and 2.8 .

" Transferred Assets " means, for each Group Annuity Contract, the assets included on the Transferred Assets Schedule.

" Transferred Assets Schedule " means [* * *].

" Uncovered Claim " is defined in Section 9.2(c) .

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" Wage Group Annuity Contract " means the single premium, non-participating group annuity contract, and all exhibits thereto, substantially in the form attached as Schedule 1.1(d) for participants in the Plans who were classified as wage employees by Company.

1.2 Interpretation .

(a) Whenever the words "include," "includes" or "including" are used in this Agreement they will be deemed to be followed by the words "without limitation." The use of "or" is not intended to be exclusive unless expressly indicated otherwise.

(b) Words denoting any gender will include all genders. The meanings given to terms defined in this Agreement will be equally applicable to both singular and plural forms of such terms. Where a word or phrase is defined in this Agreement, each of its other grammatical forms will have a corresponding meaning.

(c) The schedules, the Company Disclosure Letter, the Spreadsheet, the Identified USB Flash Drive and the Base File are incorporated by reference and made a part of this Agreement as if set forth fully in this Agreement.

(d) A reference to any party to this Agreement or any other agreement or document will include such party's successors and permitted assigns.

(e) A reference to any Law or to any provision of any Law will include any amendment thereto, any modification or re-enactment thereof, any Law substituted therefor and all regulations issued thereunder or pursuant thereto.

(f) All references to "$" and dollars will refer to United States currency. All references to the word "days" will refer to calendar days unless otherwise specified in a particular case.

(g) All references to any financial or accounting terms will be defined in accordance with GAAP to the extent GAAP is applicable. However, with respect to any financial or accounting terms related to Insurer's accounting, the accounting terms will be in accordance with relevant state insurance statutory accounting principles (including applicable permitted practices).

(h) Reference to any agreement (including this Agreement), document or instrument means such agreement, document or instrument as amended or modified and in effect from time to time in accordance with its terms and, if applicable, this Agreement.

(i) The words "hereof," "herein" and "hereunder" and words of similar import when used in this Agreement will refer to this Agreement as a whole and not any particular provision of this Agreement, and section and schedule references relate to this Agreement unless otherwise specified.

(j) Without limiting Section 11.16 , the Parties each acknowledge that (i) the Parties jointly and equally participated in the drafting of this Agreement and all other agreements

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contemplated by this Agreement, (ii) the Parties have each been adequately represented and advised by legal counsel with respect to this Agreement and the Transactions and (iii) no presumption will be made that any provision of this Agreement will be construed against any Party by reason of such role in the drafting of this Agreement and any other agreement contemplated by this Agreement.

(k) The table of contents and the headings of the articles and sections in this Agreement are inserted for convenience of reference only and are not intended to be a part of, or to affect the meaning or interpretation of, this Agreement.

(l) All capitalized terms not defined in the Company Disclosure Letter or any schedule will have the meanings ascribed to them in this Agreement. The representations and warranties of Company in this Agreement are made and given, and the covenants are agreed to, subject to the disclosures and exceptions in the Company Disclosure Letter. The disclosure of any matter in any section of the Company Disclosure Letter will be a disclosure for all purposes of this Agreement and all other sections of the Company Disclosure Letter to which such matter relates to the extent that the applicability of such matter to such other section of the Company Disclosure Letter is reasonably apparent on its face. The Company Disclosure Letter has been arranged in sections corresponding to the sections and paragraphs of this Agreement for the convenience of the Parties. The listing of any matter by Company in the Company Disclosure Letter will expressly not constitute an admission by Company, or to otherwise imply, that any such matter is material, is required to be disclosed under this Agreement or falls within relevant minimum thresholds or materiality standards in this Agreement. No disclosure in the Company Disclosure Letter relating to any possible breach or violation of any Contract or Law will be construed as an admission or indication that any such breach or violation exists or has actually occurred. The listing by Company of any matter in the Company Disclosure Letter will not expand the scope of Company's representations, warranties or covenants in this Agreement. All attachments to the Company Disclosure Letter are incorporated by reference into the Company Disclosure Letter in which they are directly or indirectly referenced. The information contained in the Company Disclosure Letter is in all events provided subject to the confidentiality restrictions in Section 11.14 .

ARTICLE II

PURCHASE OF SINGLE PREMIUM GROUP ANNUITY CONTRACTS

2.1 Closing . At the Closing, Independent Fiduciary will irrevocably direct Plan Trustee to make the Payment at Close, and Insurer will issue and deliver to Company the Group Annuity Contracts (the " Group Annuity Contracts Issuance "). The Group Annuity Contracts will be issued and delivered in Pennsylvania.

2.2 Time and Place of Closing .

(a) On the terms and subject to the conditions in this Agreement, the consummation of the Transactions, including the Payment at Close and the Group Annuity Contracts Issuance (the " Closing ") will take place at the offices of K&L Gates, 210 Sixth Avenue, Pittsburgh,

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PA 15222-2613 on (i) [* * *], if at least three Business Days prior to such date, all of the conditions in Article VIII have been satisfied or waived (except for those conditions that in accordance with their terms will be satisfied on the Closing Date) or (ii) at such other time, date and location as the Parties may agree in writing (the " Closing Date ").

(b) If the capital markets are in disarray or otherwise disrupted such that there is significant uncertainty regarding whether a true market value can be obtained with respect to all or a substantial portion of, the Transferred Assets or the Credit Default Index, either Company or Insurer, no later than two Business Days prior to the Target Closing Date, may by written request to the other Party, setting forth the basis for its concerns regarding the capital markets, request that the Closing Date be deferred to a date later than the Closing Date but in no event to a date later than the Outside Date. If the Party receiving the deferral request consents, which consent will not be unreasonably withheld, to the deferred Closing Date in writing delivered to the requesting Party, this Agreement will be deemed amended and the consented to Closing Date will be known as the " Deferred Closing Date " and the term "Deferred Closing Date" substituted for the term "Closing Date" wherever it appears in this Agreement.

2.3 Deliveries at Closing .

(a) At the Closing, Independent Fiduciary will, pursuant to the Plan Trustee Direction Letter, irrevocably direct Plan Trustee to deliver to Insurer, (with a copy to Company), the [* * *] and Bill of Sale, each duly executed by Plan Trustee, and to transfer the Closing Date Cash Amount and Independent Fiduciary will deliver, or cause to be delivered, to Insurer and Company a certificate, dated as of the Closing Date, duly executed by an authorized officer of Independent Fiduciary certifying as to the satisfaction of the conditions specified in Sections 8.1(a) , 8.1(b) , 8.2(a) and 8.2(b) , in each case, as to Independent Fiduciary.

(b) At the Closing, Insurer will deliver to Company (and with respect to item (ii) will also deliver to Independent Fiduciary) the following duly executed documents and other items:

(i) The Group Annuity Contracts (including all exhibits and attachments thereto), duly executed by Insurer;

(ii) A certificate, dated as of the Closing Date, duly executed by an authorized officer of Insurer certifying as to the satisfaction of the conditions specified in Sections 8.1(a) , 8.1(b) and 8.3(a) , in each case, as to Insurer;

(iii) The [* * *], duly executed by Insurer; and

(iv) The Bill of Sale, duly executed by Insurer.

(c) At the Closing, Company will deliver to Insurer (and with respect to item (ii) will also deliver to Independent Fiduciary, and with respect to the other items below, with a copy to Independent Fiduciary) the following duly executed documents:

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(i) The Group Annuity Contracts (including all exhibits and attachments thereto), duly executed by Company; and

(ii) A certificate, dated as of the Closing Date, duly executed by an authorized officer of Company certifying as to the satisfaction of the conditions specified in Section 8.2(a) , 8.2(b) and 8.3(a) , in each case, as to Company.

2.4 Allocation of Transferred Assets . Upon the Group Annuity Contracts Issuance, Insurer will allocate the Transferred Assets transferred at Closing to the commingled separate account established by Insurer in connection with the Group Annuity Contracts, less any premium taxes.

2.5 Closing Date Calculations . As set forth in this Section 2.5 , Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to calculate the Closing Date Asset Portfolio Full Market Value and the Closing Date Cash Amount, with respect to each Group Annuity Contract, prior to the Closing Date to reconcile any adjustments to the Base Annuity Premium.

(a) Closing Annuity Exhibits . In order for Insurer to create the annuity exhibits that will be attached to each Group Annuity Contract at Closing:

(i) On the day that is 18 Business Days prior to the Target Closing Date, Company will deliver to Insurer an updated data file in a form consistent with the Base File, except that such data file will include all corrections and changes to the data in the Base File identified by Company as of such date (the " Closing Data File "). On the 13 th Business Day prior to the Target Closing Date, Insurer will deliver to Company proposed Annuity Exhibits, which Insurer will have prepared using the Closing Data File.

(ii) As soon as reasonably practicable and in any event by the second Business Day following Insurer's delivery of such proposed Annuity Exhibits, Company will notify Insurer of any discrepancy between the proposed Annuity Exhibits and the Closing Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.9).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the tenth Business Day prior to the Target Closing Date and Insurer will reflect any agreed on changes in the revised Annuity Exhibits (the " Closing Annuity Exhibits ").

(b) Closing Date Asset Portfolio Full Market Value . Independent Fiduciary will direct Plan Trustee to deliver to Insurer on the Business Day immediately prior to the Target Closing Date a calculation of the value of each asset on the Transferred Assets Schedule, calculated in accordance with the methodology set forth in Schedule 2.5(b) , as of the close of business on the Business Day prior to the Closing (the aggregate amount of such valuations, the " Closing Date Asset Portfolio Full Market Value "). In the event of any discrepancy among the Parties with respect

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to the Closing Date Asset Portfolio Full Market Value is unable to be amicably reconciled, such discrepancy will be addressed in accordance with Section 2.9 .

(c) Cash and Transferred Assets Exhibit . As early as practicable on the Closing Date (and prior to the Closing), Insurer will produce and deliver to Company cash and transferred assets schedules, which will incorporate the Transferred Assets Schedule and the Closing Date Asset Portfolio Full Market Value and reflect the Closing Date Cash Amount. Insurer will attach such cash and transferred assets schedules as the "Cash and Transferred Assets Exhibit" to the Group Annuity Contracts.

(d) Closing Date Cash Amount . On the Closing Date (but prior to the Closing):

(i) Insurer will deliver to Company a calculation of the Closing Date Cash Amount. The " Closing Date Cash Amount " will be equal to [* * *]. Insurer will simultaneously deliver to Company a schedule in the form set forth in the Spreadsheet [* * *] providing in reasonable detail all information supporting the calculation of the Closing Date Cash Amount.

(ii) Insurer will calculate the Closing Date Cash Amount using the data provided in accordance with Sections 2.5(a) and 2.5(b) .

2.6 Dry-Run Calculations . Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to produce a trial calculation, with respect to each Group Annuity Contract, of the Closing Date Cash Amount in order to agree on best practices for Closing Date procedures.

(a) Transferred Asset Schedule . Five days prior to Dry-Run Calculation Delivery Date Company will provide Insurer with the expected Transferred Asset Schedule. Insurer will promptly advise Company of [* * *].

(b) Dry-Run Asset Valuation . Independent Fiduciary will direct Plan Trustee to deliver to Insurer on the Business Day immediately prior to the Dry-Run Calculation Delivery Date a calculation of the value of each asset in the Transferred Assets Schedule, calculated in accordance with the methodology in Schedule 2.5(b) as of the close of business on the Business Day immediately prior to the Dry-Run Calculation Delivery Date (the " Dry-Run Date Asset Portfolio Full Market Value ").

(c) Dry-Run Cash Payment Amount . On the Dry-Run Calculation Delivery Date:

(i) Insurer will deliver to Company a calculation of the Dry-Run Cash Payment Amount. The " Dry-Run Cash Payment Amount ," as set forth in the Spreadsheet [* * *], will equal to [* * *].

(ii) Insurer will calculate the Dry-Run Cash Payment Amount using the data provided in the Closing Data File.

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2.7 Calculation of Interim Post-Closing [* * *] Amount; Related True-Up . As set forth in this Section 2.7 , Insurer, Company and Plan Trustee (at the direction of Independent Fiduciary) will cooperate in good faith to produce an Interim Post-Closing [* * *] Amount calculation, with respect to each Group Annuity Contract, following the Closing Date to reconcile any adjustments to the Closing Date Consideration. [* * *]

(a) Interim Post-Closing Data File . On the 52 nd Business Day after the Closing, Insurer will deliver to Company an updated data file in a form consistent with the Base File, which new file will include all corrections to the data in the Closing Data File identified by Insurer as of the Interim Post-Closing Data Cut-Off Date and reflecting any other changes agreed between Insurer and Company (the " Interim Post-Closing Data File "). On the 65 th Business Day following the Closing Date, Insurer will calculate [* * *] (the " Interim Post-Closing Consideration ").

(b) Interim Post-Closing Annuity Exhibits . In order for Insurer to create the annuity exhibits that will be attached to the Group Annuity Contracts as amended pursuant to Section 2.14(a) :

(i) On the 57 th Business Day after the Closing, Insurer will deliver to Company revised Closing Annuity Exhibits, utilizing and consistent with the Interim Post-Closing Data File.

(ii) As soon as practicable and in any event by the 59 th Business Day following the Closing, Company will notify Insurer of any discrepancy between the revised Closing Annuity Exhibits and the Interim Post-Closing Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.9).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the 62 nd Business Day following the Closing and Insurer will reflect any agreed on changes in the revised Closing Annuity Exhibits (the " Interim Post-Closing Annuity Exhibits ").

(c) Interim Post-Closing Cash and Transferred Assets Exhibit Supplement . On or prior to the day that is the 62 nd Business Day following the Closing Date, Insurer will produce and deliver to Company cash and transferred assets schedules, which will incorporate the Transferred Assets Schedule delivered pursuant to Section 2.5(c) and updated pursuant to Section 2.17 (only with respect to Cash) and reflect any payment pursuant to Section 2.7(e) . Insurer will attach such cash and transferred assets schedules as the "Cash and Transferred Assets Exhibit Supplement" to the amendment to the Group Annuity Contracts pursuant to Section 2.14(a) .

(d) Interim Post-Closing [* * *] Amount . On the 62 nd Business Day following the Closing Date, Insurer will deliver to Company a calculation of the " Interim Post-Closing [* * *] Amount ," which will be equal to [* * *]. Insurer will simultaneously deliver to Company a schedule in the form set forth in the Spreadsheet [* * *] providing in reasonable detail all information supporting the calculation of the Interim Post-Closing [* * *] Amount. Insurer will also provide an accompanying file that includes further detail including, but not limited to, [* * *].

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(e) True-Up Payment Upon Resolution of Interim Post-Closing [* * *] Amount . Within five Business Days of the delivery by Insurer of the calculation of the Interim Post-Closing [* * *] Amount:

(i) If the calculation of the Interim Post-Closing [* * *] Amount with respect to either of the Group Annuity Contracts results in a negative number, then, subject to the execution of the amended applicable Group Annuity Contract in connection with Section 2.14(a) , Insurer will pay to Plan Trustee an amount, in Cash, equal to [* * *]; and

(ii) If the calculation of the Interim Post-Closing [* * *] Amount with respect to either of the Group Annuity Contracts results in a positive number, then, subject to the execution of the amended applicable Group Annuity Contract in connection with Section 2.14(a) , Independent Fiduciary will irrevocably direct Plan Trustee to pay to Insurer an amount, in Cash, equal to [* * *].

2.8 Calculation of Final [* * *] Amount; Related True-Up . As set forth in this Section 2.8 , Insurer, Company and Plan Trustee will cooperate in good faith to produce a Final [* * *] Amount calculation following the Closing Date to reconcile any adjustments to the Interim Post-Closing Consideration. [* * *]

(a) Final Data File .

(i) On the day that is 115 Business Days after the Closing, Insurer will deliver to Company an updated data file in a form consistent with the Base File, which new file will include all corrections to the data in the Closing Data File and the Interim Post-Closing Data File identified by Insurer as of the Final Data Cut-Off Date and reflecting any other changes agreed between Insurer and Company (the " Final Data File "). On the 126 th Business Day following the Closing Date, Insurer will calculate [* * *]. [* * *]

(ii) [* * *]

(b) Final Annuity Exhibits . In order for Insurer to create the Annuity Exhibits that will be attached to the Group Annuity Contracts as amended pursuant to Section 2.14(b) :

(i) On the 121 st Business Day after the Closing, Insurer will deliver to Company revised Interim Post-Closing Annuity Exhibits, utilizing and consistent with the Final Data File.

(ii) As soon as practicable and in any event by the 124 th Business Day following the Closing, Company will notify Insurer of any discrepancy between the revised Interim Post-Closing Annuity Exhibits and the Final Data File (it being understood that the failure of Company to so notify Insurer will not be deemed to constitute a waiver by Company of any of its rights under Section 2.9).

(iii) Insurer and Company will cooperate in good faith to resolve such discrepancies, if any, on or prior to the 126 th Business Day following the Closing and Insurer will

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reflect any agreed on changes in the revised Interim Post-Closing Annuity Exhibits (the " Final Annuity Exhibits ").

(c) Final Cash and Transferred Assets Exhibit Supplement . On or prior to the day that is the 126 th Business Day following the Closing Date, Insurer will produce and deliver to Company cash and transferred assets schedules, which will incorporate the Transferred Assets Schedule delivered pursuant to Section 2.7(c) (only with respect to Cash) and reflect any payment pursuant to Section 2.8(e) . Insurer will attach such cash and transferred assets schedules as the " Cash and Transferred Assets Exhibit Supplement " to the amendments to the Group Annuity Contracts pursuant to Section 2.14(b) .

(d) Final [* * *] Amount . On the 126 th Business Day following the Closing Date:

(i) Insurer will deliver to Company a calculation of the Final [* * *] Amount in the form set forth in the Spreadsheet [* * *]. The " Final [* * *] Amount " will be equal to [* * *].

(ii) Insurer will calculate the Final [* * *] Amount using the data provided in accordance with Section 2.8(a) (as may be modified pursuant to Section 2.8(b)).

(e) True-Up Payment Upon Resolution of Final [* * *] Amount . By the later of (i) the date that is five Business Days following the final resolution of all disputes in accordance with Section 2.9 and (ii) five Business Days following the delivery by Insurer of the calculation of the Final [* * *] Amount:

(i) If the calculation of the Final [* * *] Amount results in a negative number with respect to either Group Annuity Contract, then, subject to the execution of the amended applicable Group Annuity Contract in connection with Section 2.14(b) , Insurer will pay to Plan Trustee an amount, in Cash, equal to [* * *]; and

(ii) If the calculation of the Final [* * *] Amount results in a positive number with respect to either Group Annuity Contract, then, subject to the execution of the amended applicable Group Annuity Contract in connection with Section 2.14(b) , Independent Fiduciary will irrevocably direct Plan Trustee to pay to Insurer an amount, in Cash, equal to [* * *].

2.9 Final [* * *] Amount; Asset Valuation Disputes .

(a) Within ten Business Days following the delivery by Insurer of the calculation of the Final [* * *] Amount in accordance with Section 2.8(d)(i) , (i) Company may dispute any Insurer Provided Component and (ii) Insurer may dispute any Company Provided Component.

(b) Any dispute described in Section 2.9(a) (an " Arbitration Dispute ") will be resolved in accordance with the procedures set forth in Schedule 2.9(b) .

(c) Any Insurer Provided Component or Company Provided Component that is not disputed pursuant to Section 2.9(a) will be final and binding on the Parties.

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For the avoidance of doubt, for purposes of this Section 2.9 a dispute may relate to the application of the Insurer Provided Component or a Company Provided Component as the case may be, to the calculation of the [* * *] or the Interim Post-Closing [* * *] Amount.

2.10 Adjustment to the Target Closing Date . If subsequent to the calculation or delivery of a calculation or other deliverable that was required to be performed or delivered as of, on or prior to a day that is some number of days prior to the Target Closing Date, the Target Closing Date is adjusted so that it is a later date, the applicable Party will re-calculate or deliver such calculation or other deliverable as of, on or prior, as applicable, to such number of days prior to the Target Closing Date as so adjusted.

2.11 Business Day Adjustments . If any calculation set forth in this Article II is to be performed as of a day that is not a Business Day, such calculation will be performed as of the immediately preceding Business Day.

2.12 Access and Cooperation . Company and Insurer will, and Independent Fiduciary will cause Plan Trustee to, provide the others and their Representatives with reasonable access during normal business hours to examine and will provide copies of (a) the work papers and files related to the preparation of, or support for, the calculations and valuations contemplated by this Article II and (b) the relevant books and records of Insurer, Company or Plan Trustee, as applicable, and to discuss with Insurer's Company's or Plan Trustee's, as applicable, employees and Representatives involved with respect thereto. However, notwithstanding anything to the contrary set forth herein, (i) Insurer will not have any obligation to provide Company and its Representatives with access to [* * *] or any work papers or other information that discloses or reveals [* * *], nor will Company or any of its Representatives attempt to derive, directly or indirectly, any [* * *] from any other information provided to Company, Company's Affiliates or Representatives or Company's Affiliates' Representatives and (ii) Company will not have any obligation to provide Insurer or its Representatives with any work papers of its certified public accountants. If, notwithstanding the foregoing, Company or any of its Representatives obtain any [* * *], whether directly or indirectly, or through a process of derivation, Company will and will direct its Representatives to not use such information and to destroy (and certify to Insurer destruction of) such information and to otherwise transfer any rights in such information to Insurer.

2.13 Data Updates; Mortality Adjustments .

(a) Access To Covered Life Information . From and after the date of this Agreement through the date on which the Final [* * *] Amount is finally determined pursuant to Sections 2.8 and 2.9 , Company will provide Insurer with reasonable access to all updates of the data, including benefit amounts, benefit forms, dates of birth, dates of death, gender and lives missing from the original data provided by Company that relate to the annuity premium payable to Insurer, in each case limited to data in connection with Covered Lives or Contingent Lives.

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(b) Insurer's Verification of Mortality . From and after the Closing Data Cut-Off Date until the Final Data Cut-Off Date, Insurer will, in accordance with Insurer's standard verification practices and procedures, review the Social Security Master Death file and the Lexis Nexis Accurint tool to attempt to determine if any Covered Lives or Contingent Lives were deceased prior to [* * *]. If (i) subject to such standard verification practices and procedures, such data source indicates that a Covered Life or Contingent Life was deceased prior to [* * *] or (ii) Company presents evidence, reasonably acceptable to Insurer, that a Covered Life or Contingent Life was deceased prior to [* * *], then, Insurer will reflect such mortality event in (A) if identified or notified at least two Business Days before the Interim Post-Closing Data Cut-Off Date, the Interim Post-Closing Data File, and reflect such mortality event in its calculation of the Interim Post-Closing [* * *] Amount, and (B) if identified or notified at least prior to delivery of the Final Data File, the Final Data File, and include such mortality event in its calculation of the Final [* * *] Amount. Insurer will provide monthly updates to Company of such mortality review.

(c) Insurer's Review for Date of Birth and Gender Data; Verification of Data Errors . From and after the Closing Data Cut-Off Date until the Final Data Cut-Off Date, Insurer will, in accordance with Insurer's standard verification practices and procedures, review the Lexis Nexis Accurint tool to attempt to determine if there are [* * *]. If any errors in respect of dates of birth or gender are discovered that would potentially give rise to [* * *], Insurer will provide reasonably prompt notice to Company of such errors. If (i) subject to such standard verification practices and procedures, such data source indicates [* * *] for any Covered Life or Contingent Life, or (ii) Company presents reasonably acceptable evidence to Insurer of [* * *] with respect to an Covered Life or Contingent Life, then, Insurer will reflect [* * *] in (A) if identified or notified at least two Business Days before the Interim Post-Closing Data Cut-Off Date, the Interim Post-Closing Data File, and include [* * *] in its calculation of the Interim Post-Closing [* * *] Amount, and (B) if identified or notified at least prior to the delivery of the Final Data File, the Final Data File, and include [* * *] in its calculation of the Final [* * *] Amount. Insurer will provide monthly updates to Company of such review.

2.14 Amendments to the Group Annuity Contracts .

(a) Within five Business Days following the delivery by Insurer of the calculation of the Interim Post-Closing [* * *] Amount, Insurer and Company will amend the Group Annuity Contracts, in each case, (i) to make any changes to the Closing Date Consideration to reflect the Interim Post-Closing [* * *] Amount, (ii) to substitute the Interim Post-Closing Annuity Exhibits for the Closing Annuity Exhibits and (iii) to substitute the "Cash and Transferred Assets Exhibit Supplement" prepared pursuant to Section 2.7(c) for the "Cash and Transferred Assets Exhibit."

(b) By the later of (i) the date that is five Business Days following the final resolution of all disputes in accordance with Section 2.9 and (ii) five Business Days following the delivery by Insurer of the calculation of the Final [* * *] Amount, Insurer and Company will amend the Group Annuity Contracts, in each case, (A) to make any changes to reflect the Final [* * *] Amount (as adjusted following the resolution of any disputes in accordance with Section 2.9), (B) to substitute the Final Annuity Exhibits for the Interim Post-Closing Annuity Exhibits and (C) to

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substitute the "Cash and Transferred Assets Exhibit Supplement" prepared pursuant to Section 2.8(c) for the "Cash and Transferred Assets Exhibit Supplement" prepared pursuant to Section 2.7(c) .

2.15 Amendments to the Identified USB Flash Drive . If Company or Insurer identify any error or omission in the Identified USB Flash Drive, including the Spreadsheet, prior to the payment of the Closing Date Cash Amount, Company or Insurer, as applicable, will promptly inform the other and Company and Insurer will cooperate in good faith to update the Identified USB Flash Drive to resolve such error or omission, and such updated Identified USB Flash Drive will be initialed by Company and Insurer. The Identified USB Flash Drive, as updated pursuant to this Section 2.15 , will be binding on the Parties.

2.16 [* * *] . No less frequently than once every two weeks between the Signing Date and the Closing Date, Independent Fiduciary will direct Plan Trustee to deliver to Insurer [* * *] as set forth in Schedule 2.16 , provided, however, that [* * *] will in all events be provided as of the close of business on the Business Day immediately prior to the Dry-Run Calculation Delivery Date and the Closing Date (each [* * *]). [* * *]

2.17 Return of [* * *] . On or prior to the day that is five Business Days following the Closing Date, either Insurer or Company may [* * *]. [* * *], then (a) Insurer or Company, as applicable, will promptly notify the other, and, [* * *], (b) within five Business Days of such notice Independent Fiduciary will irrevocably direct Plan Trustee to pay Insurer an amount, in Cash, equal to [* * *], and (c) simultaneously with its receipt of such payment from Plan Trustee, Insurer will [* * *]. Insurer will amend the Transferred Assets Schedule to reflect any changes with respect to the assets listed therein.

2.18 Available Cash . Company will make available to the Plans Cash in the amount necessary to enable Plan Trustee to pay all amounts that it is directed to pay to Insurer by Independent Fiduciary pursuant to this Article II .

ARTICLE III

COMPANY'S REPRESENTATIONS AND WARRANTIES

Company hereby represents and warrants to Insurer and Independent Fiduciary as of the Signing Date and, other than with respect to Sections 3.9 and 3.10 (in each case, which will be given as of the Signing Date only), as of the Closing Date, except as set forth in the Company Disclosure Letter, that:

3.1 Due Organization, Good Standing and Corporate Power . Company is a corporation, duly organized, validly existing and in good standing under the Laws of the Commonwealth of Pennsylvania and the Plan Trust is a trust, validly formed under the Laws of the Commonwealth of Pennsylvania. Company has all requisite power and authority to enter into and carry out its obligations under this Agreement and the Ancillary Agreements to which it is, or will be at Closing, a party and to consummate the Transactions contemplated to be undertaken by Company. Company is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its sponsorship of the Plans makes such qualification or

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licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed is not material.

3.2 Authorization of Agreement and Enforceability . Company has received all necessary corporate approvals and no other action on the part of Company is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent a party thereto) and the consummation of the Transactions contemplated to be undertaken by Company under this Agreement. This Agreement is, and the Ancillary Agreements (to the extent that Company is a party thereto) when executed will be, duly executed and delivered by Company, and each is (or when executed will be) a valid and binding obligation of Company, enforceable against Company in accordance with its terms subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar Law affecting the enforcement of creditors' rights generally and by general equitable principles (such exceptions, as applicable to any Person, the " Enforceability Exceptions ").

3.3 Consents, Approvals and No Violations . The execution, delivery and performance of this Agreement by Company and the consummation by Company of the Transactions contemplated to be undertaken by Company pursuant to this Agreement do not (a) violate or conflict with any provision of the Plan Governing Documents or the certificate or articles of incorporation, bylaws, code of regulations or comparable governing documents of Company, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Company or the Plan Governing Documents, (c) require any additional Governmental Approval or (d) require any Consent of or other action by any Person under, constitute a default or an event that, with or without notice or lapse of time or both, would constitute a default under or cause or permit termination, cancellation, acceleration or other change of any right or obligation or the loss of any benefit under any provision of any Contract to which Company is a party, except where the occurrence of any of the foregoing would not have a material adverse impact on Company's ability to consummate the Transactions.

3.4 Compliance with ERISA .

(a) The Plans are maintained under and are subject to ERISA and operated in compliance with ERISA in all material respects. The Plan Trust is maintained under and is subject to ERISA and, to Company's Knowledge, is in compliance with ERISA in all material respects. The Plans' most recent favorable Internal Revenue Service determination letters are dated June 6, 2012 and July 30, 2012, and, to Company's Knowledge, no event has occurred since such dates that is reasonably likely to result in the Plans losing their Tax Qualified status. All amendments necessary to effect the Transactions, to the extent that they require authorization by Company or its Employee Benefits Committee, have been, or will be by the Closing Date, duly authorized and made by Company or its Employee Benefits Committee. Plan Trustee has been duly appointed as the directed trustee of the Plan Trust.

(b) Independent Fiduciary has been duly appointed as independent fiduciary of the Plans with respect to the purchase of one or more group annuity contracts as set forth in the IF Engagement Letter to (i) be the sole fiduciary responsible for selecting one or more insurers to provide annuities in accordance and compliance with the ERISA Requirements,

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(ii) determine whether the Transactions and the Group Annuity Contracts satisfy ERISA, (iii) represent the interests of the Plans and their participants and beneficiaries in connection with the negotiation of a commitment agreement and the terms of any agreements with Insurer, including the Group Annuity Contracts and the Annuity Certificates, (iv) direct Plan Trustee on behalf of the Plans to transfer the Transferred Assets, the Closing Date Cash Amount and any post-Closing cash payments that are payable by Plan Trustee on behalf of the Plans in connection with the consummation of the Transactions and pay any amounts payable to Insurer under Section 3 of the Group Annuity Contracts and (v) take all other actions on behalf of the Plans necessary to effectuate the foregoing (to the extent specified in the IF Engagement Letter), including to perform the covenants and agreements and make the representations and warranties in this Agreement, the Ancillary Agreements and the IF Engagement Letter, to the extent to be performed or made by Independent Fiduciary.

3.5 Plan Investments. There are no commingled investment vehicles that hold Plan Assets, the units of which are or will be Plan Assets involved in the Transactions.

3.6 No Brokers' Fee. Company has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or its respective Affiliates or Representatives, could be liable.

3.7 Accuracy of Information. To Company's Knowledge, (a) the mortality experience data files titled [* * *] uploaded to the Data Room on [* * *], titled [* * *] uploaded to the Data Room on [* * *] and titled [* * *] uploaded to the Data Room on [* * *] did not contain any misstatements or omissions that were, in the aggregate, material, and (b) the data in respect of benefit amounts, forms of annuity, solicitation status and the census data for date of birth, date of death, state of residence or gender, in each case, with respect to the Covered Lives or Contingent Lives that is furnished by or on behalf of Company to Insurer, was not generated using any materially incorrect systematic assumptions or material omissions.

3.8 Delivery of Plan Governing Documents. True, correct and complete copies of the Plan Governing Documents set forth on Schedule 3.8 have been delivered to Independent Fiduciary by Company on or prior to the Signing Date.

3.9 Settlement Accounting. As of the Signing Date, to Company's Knowledge there are no circumstances existing or that would reasonably be expected to occur that would be likely to cause Company to conclude that it may not account for the Transactions as a settlement under ASC 715.

3.10 Litigation by Plan Beneficiaries and Plan Participants. As of the Signing Date, there is no Action pending or, to Company's Knowledge, threatened, by or on behalf of any Plan Beneficiary or Plan Participant relating to the Plans or any benefit payable or alleged to be payable pursuant to the Plans.

3.11 Good and Marketable Title to Transferred Assets. The Plans have, and will transfer to Insurer at the Closing, good and marketable title to the Transferred Assets. Each such Transferred Asset will be, and at all times at or prior to the Closing Date will remain,

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unencumbered by any lien and in such form or accompanied by assignments or endorsements in blank, such that Insurer whenever necessary may negotiate any such Transferred Assets without consent or signature from Company, the Plans or any other Person.

3.12 No Other Representations or Warranties and Reliance . Except for the representations and warranties of Company expressly set forth in this Article III , neither Company, any of its Affiliates nor any other Person makes any express or implied representation or warranty on behalf of Company or any of its Affiliates with respect to Company, its Affiliates, the Transferred Assets or the Transactions. Company acknowledges and agrees that Insurer and Independent Fiduciary have relied on the representations and warranties in this Article III , and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.2(a) or 8.3(a) .

ARTICLE IV

INDEPENDENT FIDUCIARY'S REPRESENTATIONS AND WARRANTIES

Independent Fiduciary hereby represents and warrants to Company and Insurer as of the Signing Date and the Closing Date that:

4.1 Due Organization, Good Standing and Corporate Power .

(a) Independent Fiduciary is a trust company duly organized, validly existing and in good standing under the Laws of the Commonwealth of Massachusetts. Independent Fiduciary has all requisite power and authority to enter into and carry out its obligations under this Agreement and the Ancillary Agreements and to consummate the Transactions contemplated to be undertaken by Independent Fiduciary in this Agreement and in the Ancillary Agreements. Independent Fiduciary is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its representation of the Plans makes such qualification or licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed is not material.

(b) Independent Fiduciary meets the requirements of, and in the Transactions is acting as, an investment manager under ERISA § 3(38) and further constitutes a "qualified professional asset manager" under the Department of Labor Prohibited Transaction Class Exemption 84-14 solely with respect to the transfer of assets to Insurer in connection with the Transactions and the Group Annuity Contracts (but not the selection of such assets or the management of such assets prior to the transfer). Independent Fiduciary is experienced in independent fiduciary work and, together with its reliance on its consultant, AonHewitt Investment Consulting, Inc., and its counsel, Groom Law Group, Chartered, Independent Fiduciary is knowledgeable concerning the large scale group annuity marketplace and reasonably believes that it has the requisite expertise to select Insurer issuing the Group Annuity Contracts

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and perform its obligations under this Agreement and the IF Engagement Letter. Independent Fiduciary accepted its designation as the sole fiduciary of the Plans with authority to select one or more insurers to issue one or more group annuity contracts in the IF Engagement Letter (a true and correct copy of which has been provided to Insurer, with the fees to be paid to Independent Fiduciary redacted), and Independent Fiduciary reaffirms its fiduciary status as set forth in the IF Engagement Letter. Independent Fiduciary has provided and will continue to provide the services described in Section 2 of the IF Engagement Letter prudently and for the exclusive benefit and in the sole interest of the Plans and their participants and beneficiaries. Independent Fiduciary has accepted appointment as independent fiduciary of the Plans to (i) be the sole fiduciary responsible for selecting one or more insurers to provide annuities in accordance and compliance with the ERISA Requirements, (ii) determine whether the Transactions and the Group Annuity Contracts satisfy ERISA, (iii) represent the interests of the Plans and their participants and beneficiaries in connection with the negotiation of a commitment agreement and the terms of any agreements with Insurer, including the Group Annuity Contracts and the Annuity Certificates, (iv) direct Plan Trustee on behalf of the Plans to transfer the Transferred Assets, the Closing Date Cash Amount and any post-Closing cash payments that are payable by Plan Trustee on behalf of the Plans in connection with the consummation of the Transactions and pay any amounts payable to Insurer under Section 3 of the Group Annuity Contracts and (v) take all other actions on behalf of the Plans necessary to effectuate the foregoing, including to perform the covenants and agreements and make the representations and warranties in this Agreement and the IF Engagement Letter, to the extent to be performed or made by Independent Fiduciary.

4.2 Authorization of Agreement and Enforceability . Independent Fiduciary has received all necessary corporate approvals and no other action on the part of Independent Fiduciary is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent a party) and the consummation of the Transactions contemplated to be undertaken by Independent Fiduciary under this Agreement and the Ancillary Agreements (to the extent a party). This Agreement and all Ancillary Agreements (to the extent a party), have been duly executed and delivered by Independent Fiduciary and are valid and binding obligations of Independent Fiduciary, enforceable against Independent Fiduciary, in accordance with their respective terms, subject to the Enforceability Exceptions.

4.3 Consents, Approvals and No Violations . The execution, delivery and performance of this Agreement and the Ancillary Agreements (to the extent a party) by Independent Fiduciary and the consummation by Independent Fiduciary of the Transactions contemplated to be undertaken by Independent Fiduciary pursuant to this Agreement and the Ancillary Agreements (to the extent a party thereto) do not (a) violate or conflict with the certificate or articles of incorporation, bylaws, code of regulations or the comparable governing documents of Independent Fiduciary, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Independent Fiduciary, (c) require any additional Governmental Approval or (d) require any Consent of or other action by any Person.

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4.4 ERISA Related Determinations .

(a) Independent Fiduciary is fully qualified to serve as an independent fiduciary in connection with the Transactions and any Ancillary Agreements (to the extent a party), and it is independent of Company and Insurer. Independent Fiduciary has ensured that AonHewitt Investment Consulting, Inc. has established commercially reasonable ethical walls between the personnel working on the Transactions and the personnel working on other matters involving Company, Insurer or any of either's Affiliates.

(b) Independent Fiduciary has selected Insurer to issue the Group Annuity Contracts as set forth in this Agreement and such selection, the Transactions, any Ancillary Agreements and the Group Annuity Contracts (including their terms) each satisfies the ERISA Requirements, subject to Section 4.4(c) . Independent Fiduciary has delivered a certification confirming the foregoing, executed by a duly authorized officer of Independent Fiduciary, to the Committee.

(c) If (i) an Independent Fiduciary MAC has not occurred between the Signing Date and the Closing Date, or an Independent Fiduciary MAC has occurred, but it is not continuing on the Closing Date, and (ii) the officers' certificates contemplated by Sections 2.3(b) and 2.3(c) are delivered to Independent Fiduciary, the selection of Insurer to provide the Group Annuity Contracts, the terms of the Group Annuity Contracts and the Plans' use of assets for the purchase of the Group Annuity Contracts as contemplated by this Agreement will satisfy the ERISA Requirements as of the Closing Date.

(d) The Transactions and the purchase of the Group Annuity Contracts do not result in a Non-Exempt Prohibited Transaction.

(e) Sections 4.4(b) , 4.4(c) and 4.4(d) assume that the representations in Sections 3.5 and 5.11 and the first sentence in Section 5.12 are true and correct in all material respects as of the Closing Date.

(f) The Plan Trust (i) will receive no less than adequate consideration for the Transferred Assets that it transfers in connection with the Transactions and (ii) will pay no more than adequate consideration for the Group Annuity Contracts, in each case within the meaning of "adequate consideration" under ERISA § 408(b)(17)(B) and Code § 4975(f)(10).

4.5 No Brokers' Fee . Independent Fiduciary has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or its respective Affiliates or Representatives, could be liable.

4.6 No Other Representations or Warranties and Reliance . Except for the representations and warranties of Independent Fiduciary expressly set forth in this Article IV , neither Independent Fiduciary, any of its Affiliates nor any other Person makes any express or implied representation or warranty on behalf of Independent Fiduciary or any of its Affiliates with respect to Independent Fiduciary, its Affiliates, the Transferred Assets or the Transactions. Independent Fiduciary acknowledges and agrees that Insurer and Company have relied on the

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representations in this Article IV , and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.1(a) or 8.2(a) .

ARTICLE V

INSURER'S REPRESENTATIONS AND WARRANTIES

Insurer hereby represents and warrants to Company and Independent Fiduciary as of the Signing Date and, other than with respect to Sections 5.6 and 5.13 (in each case, which will be given as of the Signing Date only), as of the Closing Date that:

5.1 Due Organization, Good Standing and Corporate Power . Insurer is a life insurance company duly organized, validly existing and in good standing under the Laws of New York. Insurer has all requisite power and authority to enter into and carry out its obligations under this Agreement and the Ancillary Agreements to which it is, or will be at Closing, a party, and to consummate the Transactions contemplated to be undertaken by it in this Agreement. Insurer is duly qualified or licensed to do business and is in good standing in each jurisdiction in which its performance of its obligations in the Group Annuity Contracts makes such qualification or licensing necessary, except in such jurisdictions where the failure to be in good standing or so qualified or licensed would not be material.

5.2 Authorization of Agreement and Enforceability . Insurer has received all necessary corporate approvals and no other action on the part of Insurer or its Affiliates is necessary to authorize the execution, delivery and performance of this Agreement and the Ancillary Agreements to which each is a party, and the consummation of the Transactions contemplated to be undertaken by Insurer under this Agreement. This Agreement and the Ancillary Agreements, other than the Group Annuity Contracts, which are addressed by Section 5.4 , have been duly executed and delivered by Insurer, and each is (or when executed will be) a valid and binding obligation of Insurer, enforceable against Insurer in accordance with its terms, subject to the Enforceability Exceptions.

5.3 Consents, Approvals and No Violations . Except for the approvals of the Governmental Authorities listed on Schedule 5.3 , the execution and delivery of this Agreement by Insurer and the consummation by Insurer of the Transactions contemplated to be undertaken by Insurer do not (a) violate or conflict with any provision of its certificate or articles of incorporation, bylaws, code of regulations or comparable governing documents, (b) violate or conflict with any Law or Order of any Governmental Authority applicable to Insurer , (c) require any Governmental Approval except for the approvals of Governmental Authorities listed on Schedule 5.3 or (d) require any Consent of or other action by any Person under, constitute a default or an event that, with or without notice or lapse of time or both, would constitute a default under or cause or permit termination, cancellation, acceleration or other change of any right or obligation or the loss of any benefit under, any provision of any Contract to which

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Insurer is a party, except where the occurrence of any of the foregoing would not have a material adverse effect on Insurer's ability to consummate the Transactions. No further filing or approval is required to issue the Annuity Certificates in accordance with the Group Annuity Contracts, other than the filings with and approvals of state insurance Governmental Authorities in the states listed on Schedule 5.3 .

5.4 Enforceability of Group Annuity Contracts . The Group Annuity Contracts, when executed contemporaneously with the completion of the Payment at Close, will be duly executed and delivered by Insurer and will be a valid and binding obligation of Insurer and enforceable against Insurer by Contractholder and each Covered Life, Contingent Life and Beneficiary, in accordance with its terms, subject to the Enforceability Exceptions. After Contractholder ceases to exist, or notifies Insurer that it will cease to perform its obligations under the Group Annuity Contracts, the Group Annuity Contracts will remain valid and binding obligations of Insurer and enforceable against Insurer by each Covered Life, Contingent Life and Beneficiary, in accordance with its terms, subject to the Enforceability Exceptions. At all times, the right to a benefit under the Group Annuity Contracts, in accordance with their terms, will be enforceable by the sole choice of the Covered Life, Contingent Life or Beneficiary to whom the benefit is owed by the Group Annuity Contracts, subject to the Enforceability Exceptions.

5.5 Compliance with Laws . The business of Insurer has been and is being conducted in material compliance with applicable Laws, and none of the licenses, permits or Governmental Approvals required for the continued conduct of the business of Insurer as such business is currently being conducted will lapse, terminate, expire or otherwise be impaired as a result of the consummation of the Transactions contemplated to be undertaken by Insurer or its Affiliates under this Agreement, except as would not reasonably be expected to have, individually or in the aggregate, a material adverse effect on the ability of Insurer to perform its obligations under this Agreement.

5.6 Litigation . As of the date of this Agreement, there is no Action pending or, to Insurer's Knowledge, threatened against Insurer that in any manner challenges or seeks to prevent, enjoin or materially alter or delay the Transactions or that could reasonably be expected to materially impair or restrict Insurer's ability to consummate the Transactions and to perform its obligations thereunder.

5.7 No Brokers' Fee . Insurer has no Liability for any fee, commission or payment to any broker, finder or agent with respect to the Transactions for which any other Party, or their respective Affiliates or Representatives, could be liable.

5.8 Accuracy of Data Provided . Insurer represents and warrants that, to Insurer's Knowledge, (a) all material information provided to Company or Independent Fiduciary (other than Company Provided Components, which will include any Insurer information based on Company Provided Components) in connection with the Transactions was, as of the date indicated on such information, true and correct in all material respects and (b) no change has occurred since the date indicated on such information that Insurer has not publicly disclosed or disclosed to the recipient of such information that would cause such information, taken as a whole, to be materially false or misleading.

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5.9 No Post-Closing Liability . Following the Closing, none of Company, the Plans, Company's Affiliates, Independent Fiduciary nor any of their respective directors, officers, trustees or fiduciaries will have any Liability to pay any Annuity Payment.

5.10 Sufficient Resources and Market Sophistication . Insurer is a sophisticated investor with experience in the purchase of publicly traded securities and privately traded debt and equity securities of the type to be included in the Transferred Assets. Insurer has had access to such information as it deems necessary to make its decision to acquire the Transferred Assets from the Plans. Without limiting any rights or remedies of Insurer set forth in this Agreement, Insurer acknowledges that, [* * *], (a) Company and the Plans' fiduciaries currently may have information with respect to the Transferred Assets that is not known to Insurer and that may be material to a decision to acquire the Transferred Assets and (b) Insurer has determined to acquire the Transferred Assets and the investment risk associated with the Transferred Assets notwithstanding its lack of knowledge of such information. Insurer acknowledges and agrees that Company and the Plans have not given any investment advice nor rendered any opinion to Insurer as to whether the acquisition of the Transferred Assets is prudent. For the avoidance of doubt, nothing in this Section 5.10 will affect the truth or accuracy of Company's or Independent Fiduciary's representations and warranties expressly set forth in this Agreement.

5.11 Relationship to the Plans . Insurer is not (a) a trustee of the Plans (other than a non-discretionary trustee who does not render investment advice with respect to any assets of the Plans), (b) a plan administrator (within the meaning of ERISA § 3(16)(A) and Code § 414(g)), (c) a fiduciary (within the meaning of ERISA § 3(16)(A)) who has expressly agreed in writing to manage, acquire or dispose of Plan Assets on a discretionary basis or (d) an employer any of whose employees are covered by the Plans or an Affiliate of any such employer.

5.12 Compliance with ERISA . Schedule 5.12 sets forth a true and complete list of Insurer's Affiliates that are (a) investment managers within the meaning of ERISA § 3(38) and that manages assets subject to ERISA and (b) other defined benefit service providers, including investment advisors under the Investment Advisers Act of 1940. The execution and delivery of this Agreement and the Ancillary Agreements, to the extent a party, by Insurer, and the consummation by Insurer of the Transactions contemplated to be undertaken by Insurer, do not result in a Non-Exempt Prohibited Transaction. Neither Insurer nor any of Insurer's Affiliates is a fiduciary of the Plan who either (a) has or exercises any discretionary authority or control with respect to the investment of Plan Assets that are or will be involved in the Transactions or the transactions contemplated by the Ancillary Agreements or (b) renders investment advice (within the meaning of ERISA § 3(21)(A)(ii) or Code § 4975(e)(3)(B)) with respect to such assets.

5.13 Financial Metrics . As of the Signing Date, to Insurer's knowledge, there are no facts or circumstances that would cause its RBC Ratio to be [* * *].

5.14 No Other Representations or Warranties and Reliance . Except for the representations and warranties of Insurer expressly set forth in this Article V , none of Insurer, any of its Affiliates or any other Person makes any express or implied representation or warranty on behalf of Insurer or any of its Affiliates with respect to Insurer, its Affiliates or the Transactions. Insurer acknowledges and agrees that Company and Independent Fiduciary have relied on the

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representations and warranties in this Article V , and such representations and warranties will not be affected in any way by reason of any investigation made by or on behalf of such Parties or their respective Affiliates or Representatives, or by reason of the fact that such Parties or their respective Affiliates or Representatives knew or should have known that any such representation or warranty is, was or might be inaccurate, or by reason of such Party's waiver of any condition in Section 8.1(a) or 8.3(a) .

ARTICLE VI

PRE-CLOSING COVENANTS

The Parties agree as follows with respect to the period between the Signing Date and the Closing Date (except as otherwise expressly stated to apply to a different period):

6.1 Efforts to Close, Regulatory Clearances and Third-Party Consents .

(a) In addition to the actions specifically provided for elsewhere in this Agreement and in any Ancillary Agreement, each of the Parties will cooperate with each other and use (and, except with respect to Independent Fiduciary, will cause their respective Affiliates to use) their respective Commercially Reasonable Efforts to take, or to cause to be taken, all actions, and to do, or to cause to be done, all things reasonably necessary on its part to consummate the Closing. Without limiting the generality of the foregoing, Company and Insurer will use their respective Commercially Reasonable Efforts to obtain and to cause others to obtain, as soon as practicable, all required Governmental Approvals at the Closing or as otherwise contemplated by this Agreement that may be or become necessary for the performance of their respective obligations under this Agreement and the Ancillary Agreements and the consummation of the Transactions, including approval of the Annuity Certificates from all state agencies from which approval is required pursuant to Section 7.2(d) , and will cooperate fully with each other in promptly seeking to obtain such Governmental Approvals and Consents. Without limiting the foregoing and subject to applicable legal limitations and the written instructions of any Governmental Authority, from the Signing Date until the Closing Date, each of the Parties agrees to (i) reasonably cooperate and consult with one another, (ii) furnish to the other Parties such necessary information and assistance as such other Party may reasonably request in connection with its preparation of any notifications or filings, (iii) keep each other apprised of the status of material matters relating to the completion of the Transactions, including apprising the other Parties of the substance of material notices or communications received by such Party from any third party or any Governmental Authority with respect to such Transactions, within five Business Days of receipt thereof, and (iv) to the extent reasonably practicable, permit the other Parties to review and incorporate the other Party's reasonable comments in any material communication to be given by it to any Governmental Authority with respect to the Transactions.

(b) Without limiting the generality of Section 6.1(a) , where the cooperation of third parties that are not Governmental Authorities, such as a trustee, record keeper or paying agent, would be necessary for a Party to completely fulfill its obligations under this Agreement

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or any Ancillary Agreement, such Party will use its Commercially Reasonable Efforts to cause such third parties to provide such cooperation.

6.2 Public Announcements .

(a) Company will have the right to prepare and issue its own press release announcing the execution and delivery of this Agreement and the Transactions, a copy of which will be provided to Insurer and Independent Fiduciary for review no less than two days prior to the issuance thereof, and Company will consider in good faith any comments made by Insurer (or Independent Fiduciary, as applicable). From the Signing Date through the Closing Date, Company and Insurer each may make such public written or oral statements related to the Transactions as it deems necessary or appropriate, in its sole discretion. However, each such Party will seek to give the other Party (and Independent Fiduciary, to the extent the statement references Independent Fiduciary or its role, duties or conclusions) a reasonable opportunity to review and comment on such statements in advance to the extent practicable and the Party will consider any comments made by such other Party in good faith, it being understood that neither Company nor Insurer (nor Independent Fiduciary) will have any right of approval over public statements by the other Party. Each of Company and Insurer may make any public disclosure required by applicable Law or securities listing standards, in which case each of Company and Insurer will provide such disclosure to the other Party (and to Independent Fiduciary, to the extent such disclosure references Independent Fiduciary or its role, duties or conclusions) for review prior to the issuance thereof and will consider any comments made by such other Party (or Independent Fiduciary, as applicable) in good faith.

(b) Insurer acknowledges that Company will publicly disclose any information that it reasonably believes is required by the rules of the SEC to be so disclosed. However, if Company concludes that disclosure of this Agreement is required by such rules, (i) Company and Insurer will cooperate to make an application by Company with the SEC for confidential treatment of information relating to the pricing of the Group Annuity Contracts and such other information as Company and Insurer mutually conclude is competitively sensitive from the perspective of Company or Insurer or otherwise merits confidential treatment and (ii) Company will include Insurer in any material correspondence (written or oral) with the SEC regarding such application for confidential treatment, and Company and Insurer will otherwise reasonably cooperate in connection with such application, including by Company proposing to redact confidential portions of documents as to which the SEC staff seeks disclosure.

(c) Notwithstanding anything to the contrary in this Agreement and without limiting the generality of Section 6.2(a) , (i) Insurer may disclose without the consent of any other Party that (in substance) Insurer was selected by Independent Fiduciary through a competitive process, and (ii) Company may disclose, without consent of or notice to any other Party that (in substance) the premium to be paid at Closing to Insurer is fair and reasonable and represents the best pricing available under the circumstances.

6.3 Notification of Certain Matters . From the Signing Date until the Closing Date, each Party will give written notice to the other Parties within five Business Days of (a) any notice or other communication from any Person alleging that the Consent of such Person is or

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may be required in connection with the Transactions or that otherwise relates to obtaining such Consent, (b) any Action commenced or threatened in writing against, relating to or involving, or otherwise affecting, it or any of its Affiliates that relate to the consummation of the Transactions or any Party's ability to perform its obligations thereunder, (c) any material communications with any Covered Life, Contingent Life or Beneficiary that relate to the Transactions and (d) the occurrence of any change or event that would reasonably be expected to cause, individually or in the aggregate, any condition to Closing in Article VIII not to be satisfied (it being understood, however, that no delay or failure to provide any such notice will be deemed to be a waiver of such condition).

6.4 Administrative Transition Process .

(a) Insurer and Company will use their respective Commercially Reasonable Efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary to coordinate and allow for the provision of recordkeeping and administration services regarding Annuity Payments and coordinate the transfer to Insurer, or Other Insurer in accordance with the Administrative Services Agreement, on and after the Annuity Commencement Date of all administration responsibilities necessary to effectively provide the recordkeeping and administration services regarding Annuity Payments commencing on the Annuity Commencement Date.

(b) Company and the Plans will provide Insurer with the information on and will complete all processes in Schedule 6.4(b) (including those that occur after Closing).

(c) If, despite Section 6.4(a) , Company and the Plans do not or cannot provide Insurer with the information on or complete all processes in Schedule 6.4(b) (occurring prior to the Closing Date) and, as a result, Insurer or Other Insurance is in good faith unable to provide the recordkeeping and administration services regarding Annuity Payments beginning on the Annuity Commencement Date or Insurer or Other Insurer is unable to enter into the Administrative Services Agreement on the Closing Date, Insurer will use its Commercially Reasonable Efforts to find alternative methods to facilitate the issuance of Annuity Payments through existing commercial arrangements or any other method that is designed to ensure that such Annuity Payments are made in a manner that complies with the obligations of the Group Annuity Contracts (an " Alternative Arrangement "). Company will cooperate in good faith with Insurer to find an Alternative Arrangement.

(d) Insurer will use its Commercially Reasonable Efforts to enter into the Administrative Services Agreement on the Closing Date.

6.5 Non-Solicitation . Unless terminated pursuant to Article X , from and after the Signing Date and prior to the Closing Date, Company will not and will cause its respective Representatives not to (a) solicit, initiate or knowingly facilitate any Alternative Transaction Proposal or the making or consummation thereof, (b) enter into any agreement, letter of intent, agreement in principle or other similar instrument with respect to any Alternative Transaction Proposal, (c) continue or otherwise participate in any discussions (except, in response to an inquiry by any Person, to notify such Person of the existence of this Section 6.5) or negotiations regarding, or furnish to any Person

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any information in connection with, any Alternative Transaction Proposal or (d) enter into or amend any agreement or other arrangement to engage any Person (including Independent Fiduciary) to solicit any Alternative Transaction Proposal.

6.6 Information Provided to Independent Fiduciary . Between the Signing Date and the Closing Date, Insurer will provide to Independent Fiduciary any information that (a) is consistent with the content, type and amount of information provided during Independent Fiduciary's pre-signing due diligence process, (b) is otherwise prepared in Insurer's ordinary course of business and (c) relates to Insurer, in each case as may be reasonably requested by Independent Fiduciary.

6.7 No Insurer Communications . From the date of this Agreement until the issuance of a welcome kit by Insurer to a Covered Life, other than as provided for in this Agreement, without Company's prior written consent, (a) Insurer will cause the employees of its retirement services business unit not to initiate any contact or communication with such Plan Participant or Plan Beneficiary in connection with the Transactions, (b) Insurer will not, and will cause all of its Affiliates not to, provide any of its insurance agents, wholesalers or retailers with any contact information of such Plan Participants or Plan Beneficiaries and (c) Insurer will not, and will cause all of its Affiliates not to, provide any of their respective other Representatives with any contact information of such Plan Participants or Plan Beneficiaries, except for those Representatives of Insurer or any of its Affiliates who need to know such information for purposes of these Transactions and agree to comply with this Section 6.7 and Section 11.14 . However, this Section 6.7 , will not restrict employees of Insurer's retirement services business unit from contacting any Plan Participant or Plan Beneficiary in connection with, or to facilitate, Insurer's performance of its obligations under the Group Annuity Contracts, the Annuity Certificates or this Article VI or Article VII . If any Plan Participant or Plan Beneficiary contacts an employee of Insurer's retirement services business unit, Insurer and Company will cooperate to coordinate a response to the Plan Participant or Plan Beneficiary.

6.8 Filing of Annuity Certificates . Thirty Business Days after the later to occur of the Signing Date or Company and Insurer agreeing on the form of annuity certificate to be filed and the related benefit terms, Insurer will file the Annuity Certificates with the applicable state agencies.

ARTICLE VII

OTHER COVENANTS

7.1 Company Actions . Except as otherwise expressly contemplated by this Agreement, following the Closing Date, Company will use its Commercially Reasonable Efforts to take, or cause to be taken, all actions, and to do, or cause to be done, all things reasonably necessary on their part to effectuate the Transactions.

7.2 Insurer Actions . Following the Closing Date, Insurer will, or will (with the exception of Section 7.2(d) , which applies to Insurer) cause Other Insurer to do the following as agent for Insurer :

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(a) Mail an Annuity Certificate to each Covered Life (and each Contingent Life who is receiving Annuity Payments as of the day the Annuity Certificates are issued) at the last address designated for such Covered Life (or Contingent Life, as applicable) by Company or the Plans, such mailing to be made as promptly as practicable but in no event later than the later to occur of (i) 116 days after the Annuity Commencement Date and (ii) 30 days after Company and Insurer agree on the forms of Annuity Certificate. However, if the final form of Annuity Certificate agreed to by Company and Insurer requires Insurer or Other Insurer to make any non-de minimis changes in their programming to prepare such Annuity Certificates, the reference to "30 days" in clause (ii) will be deemed to be "60 days." Further, solely with respect to any form of Annuity Certificate issuable to a Covered Life that must be approved by the relevant state insurance Governmental Authorities in any state but has not been approved by the date specified above, Insurer will mail such Annuity Certificate to the relevant Covered Life (by delivery of such Annuity Certificate to the last address designated for such Covered Life by Company) as promptly as reasonably practicable and in any case within 30 days following the date on which such Annuity Certificate has been approved by such relevant state insurance Governmental Authority (or if such approval results in a need for Insurer or Other Insurer to make any non-de minimis changes in their programming to prepare such Annuity Certificates, the reference to "30 days" in this proviso will be deemed to be "60 days"). To the extent that any changes are made to the form of Annuity Certificate or the related benefit terms after Company, Insurer and Other Insurer have agreed on the form of annuity certificate to be filed and the related benefit terms, the deadline to mail an Annuity Certificate to Covered Lives in this Section 7.2(a) will be extended by the number of days elapsed since Company, Insurer and Other Insurer had first agreed on the form of annuity certificate and the related benefit terms. Notwithstanding the foregoing, Insurer will use its Commercially Reasonable Efforts to cause its Annuity Certificate to be mailed in the same package as Other Insurer's annuity certificate.

(b) Make or cause to be made all Annuity Payments to each Covered Life, Contingent Life and Beneficiary, as required under the Group Annuity Contracts, from and after the Annuity Commencement Date.

(c) At Company's request, include a notice, provided by Company and reasonably acceptable to Insurer, regarding Annuity Certificates in Insurer's "welcome" mailing to the Covered Lives and Contingent Lives or other subsequent mailings made by Insurer to the Covered Lives and Contingent Lives.

(d) Use its (i) reasonable best efforts to obtain the applicable approvals by the relevant state insurance Governmental Authority to mail an Annuity Certificate to any Covered Life as soon as practicable following the Closing Date and (ii) Commercially Reasonable Efforts to take, or cause to be taken, all other actions, and to do, or cause to be done, all other things reasonably necessary on its part to effectuate the Transactions.

7.3 Correspondence Center .

(a) Insurer , or Other Insurer as agent for Insurer pursuant to the Administrative Services Agreement, will maintain, at its cost and expense, a toll-free phone number or a website (the " Annuity Benefits Correspondence Center ") that will be available from and after the Closing

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Date for Covered Lives and Contingent Lives to call with questions related to the Group Annuity Contracts and the Annuity Certificates, it being understood that the Annuity Benefits Correspondence Center need not be solely dedicated to Covered Lives and Contingent Lives.

(b) For a period of five years following the Closing Date, Company will maintain, at its cost and expense, a point of contact (the " PPG Benefits Center ") that will be available from and after the Closing Date and to which Insurer may refer Covered Lives and Contingent Lives that pose questions to the Annuity Benefits Correspondence Center related to their benefits under the Plans, it being understood that the PPG Benefits Center need not be solely dedicated to Covered Lives and Contingent Lives.

(c) If any Covered Life, Contingent Life or Beneficiary contacts Insurer or any of its Affiliates or Representatives with questions related to their benefits under the Plans, Insurer or its Affiliates or Representatives, as applicable, will confer with Other Insurer regarding a response and may refer such person to the PPG Benefits Center. If any Covered Life, Contingent Life or Beneficiary contacts Company or any of its Affiliates or Representatives with questions related to the Group Annuity Contracts or the Annuity Certificates, Company or its Affiliates or Representatives, as applicable, may refer such person to the Annuity Benefits Correspondence Center.

7.4 Claims Procedures . From and after the Annuity Commencement Date, Insurer, or Other Insurer as agent for Insurer pursuant to the Administrative Services Agreement, will maintain written rules and procedures to govern the submission to Insurer of claims and requests by Covered Lives and Contingent Lives regarding Annuity Payments. Such written rules and procedures will be consistent with Insurer's standard rules and procedures (for handling inquiries from annuitants covered by its group annuity contracts), as the same may change from time to time.

7.5 Compliance with Prohibited Transaction Exemptions . From the Signing Date until the Closing Date, (a) Insurer agrees to keep current the information on Schedule 5.12 by providing Company on a monthly basis with any updates relating to the formation of any new legal entities or the entry into any agreements with or by investment managers or investment advisors following the Signing Date, and (b) Company will not enter into any agreements with Insurer or any investment manager or advisor listed on Schedule 5.12 (as it may be updated from time to time) whereby Insurer or any of its Affiliates would be a fiduciary expressly authorized in writing to manage, acquire or dispose of Plan Assets on a discretionary basis that have been identified as, or are reasonably likely to be included as, a Transferred Asset. If Insurer discovers the existence of any such agreement, Insurer will, and will cause its Affiliates to, cease providing any discretionary asset management services with respect to any Plan Asset before such Plan Asset becomes a Transferred Asset and Company will consent to any such termination of services.

ARTICLE VIII

CONDITIONS TO OBLIGATION TO CLOSE

8.1 Conditions to Company's Obligations . Company's obligations to consummate the Transactions contemplated by this Agreement in connection with the Closing are subject to

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satisfaction or, other than with respect to the condition in Section 8.1(d) (which cannot be waived), waiver by Company of the following conditions:

(a) The representations and warranties in Articles IV and V (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects);

(b) Insurer and Independent Fiduciary will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

(c) No Order will be in effect that prohibits consummation of any of the Transactions and no Material Litigation will have been filed or commenced and then be pending;

(d) Independent Fiduciary will have confirmed that no Independent Fiduciary MAC is continuing as of the Closing Date;

(e) Company will have confirmed that it may account for the Transactions as a settlement as contemplated under ASC 715;

(f) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected ;

(g) Each delivery contemplated by Sections 2.3(a) and 2.3(b) will have been delivered; and

(h) S imultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contract.

8.2 Conditions to Insurer's Obligations . Insurer's obligation to consummate the Transactions contemplated by this Agreement in connection with the Closing are subject to satisfaction or waiver by Insurer of the following conditions:

(a) The representations and warranties in Articles III and IV (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects);

(b) Company and Independent Fiduciary will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

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(c) No Order will be in effect that prohibits consummation of any of the Transactions and no Material Litigation will have been filed or commenced and then be pending;

(d) Each delivery contemplated by Sections 2.3(a) and 2.3(c) will have been delivered;

(e) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected ; and

(f) S imultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contract.

8.3 Conditions to Independent Fiduciary's Obligations . Independent Fiduciary's obligation to, and to direct Plan Trustee to, consummate the Transactions contemplated by this Agreement in connection with the Closing is subject to satisfaction or waiver (provided that the condition in Section 8.3(b) may not be waived) of the following conditions:

(a) The representations and warranties in Articles III and V (i) that are qualified by materiality will be true and correct in all respects or (ii) that are not qualified by materiality will be true and correct in all material respects, in each case, as of the Closing Date with the same force and effect as though made on the Closing Date (except that those representations and warranties that address matters only as of a particular date will be true and correct as of that date in all material respects), and Insurer and Company will have performed and complied with their respective covenants and agreements under this Agreement through the Closing in all material respects;

(b) Independent Fiduciary will have confirmed that no Independent Fiduciary MAC is continuing as of the Closing Date;

(c) No Order will be in effect that prohibits consummation of any Transactions contemplated by this Agreement and no Material Litigation will have been filed or commenced and then be pending;

(d) Each delivery contemplated by Sections 2.3(b) and 2.3(c) will have been delivered;

(e) The Administrative Services Agreement has been executed and delivered by Insurer and Other Insurer or an Alternative Arrangement has been effected; and

(f) S imultaneously with the Closing, Other Insurer and Company have executed and delivered the Other Group Annuity Contract.

8.4 No Frustration of Closing Conditions . None of Company, Independent Fiduciary or Insurer may rely on the failure of any condition to its obligation to consummate the Transactions in Section 8.1 , 8.2 or 8.3 , as the case may be, to be satisfied if such failure was caused by such Party's or its Affiliates' breach of its representations, warranties or covenants under this Agreement.

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ARTICLE IX

INDEMNIFICATION FOR THIRD PARTY CLAIMS

9.1 Indemnification by Insurer . From and after the Closing, Insurer agrees to indemnify, defend and hold Company, the Plans, Independent Fiduciary and any other Person acting as fiduciary or agent for the Plans and their respective Affiliates, officers, directors, stockholders, employees, agents and other Representatives (each, an " Indemnified Party ") harmless from and against any and all Liabilities (in each case, including reasonable out-of-pocket expenses and reasonable fees and expenses of counsel) to the extent arising out of or relating to the portion of any action, lawsuit, proceeding, investigation, demand or other claim against the Indemnified Party by a third party that is threatened or brought against or that involves an Indemnified Party and that arises out of or relates to any failure, or alleged failure, by Insurer to perform or comply with the terms of the Group Annuity Contracts, including making the payments in respect of the Covered Lives, Contingent Lives or Beneficiaries to be made pursuant to the Group Annuity Contracts (collectively, " Indemnified Claims "). If the Closing occurs after the Outside Date, Indemnified Claims will not, however, include any failure, or alleged failure, of any such payments in respect of the Covered Lives, Contingent Lives or Beneficiaries for a reason other than Insurer's actual failure to make a timely Aggregate Monthly Payment (as defined in the Group Annuity Contracts) under the Group Annuity Contracts. For the avoidance of doubt, if the Closing does not occur, Insurer will have no obligations under this Section 9.1.

9.2 Procedures for Indemnification Claims .

(a) Any Indemnified Party making a claim for indemnification for Indemnified Claims under Section 9.1 will notify Insurer of each Indemnified Claim in writing promptly after receiving notice of such, describing the Indemnified Claim, the amount thereof (if known and quantifiable) and the basis thereof in reasonable detail. However, an Indemnified Party's failure to notify Insurer will not relieve Insurer of its obligations under this Article IX except to the extent that (and only to the extent that) such failure caused or would reasonably be expected to cause the indemnifiable Liabilities to be greater than such Liabilities would have been had the Indemnified Party given Insurer prompt notice. This Section 9.2 and Section 9.1 will survive the Closing Date.

(b) Insurer will have the right at any time to assume the defense against any Indemnified Claim with counsel of its choice reasonably satisfactory to the Indemnified Party and control the defense of such Indemnified Claim.

(c) From and after the date that Insurer has assumed and is conducting the defense of an Indemnified Claim in accordance with Section 9.2(b) , (i) each Indemnified Party may retain separate co-counsel at its sole cost and expense and participate in, but not control, the defense of such Indemnified Claim, (ii) each Indemnified Party may retain separate counsel at its sole cost and expense to control the defense of any portion of the action, lawsuit, proceeding, investigation, demand or other claim against the Indemnified Party that is not an Indemnified Claim (the " Uncovered Claim "), (iii) Insurer and the Indemnified Party will cooperate fully with each other and any of their respective counsel in connection with the defense, negotiation or settlement of any such Indemnified Claim or (if the Indemnified Party retains counsel for the Uncovered Claim) the

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Uncovered Claim, including providing access to any relevant books and records, properties, employees and Representatives, provided that, for avoidance of doubt, the foregoing will not require any Person to waive, or take any action that has the effect of waiving, its attorney-client privilege, attorney work-product or any other applicable privilege with respect thereto, (iv) Insurer will not consent to the entry of any judgment on or enter into any settlement with respect to such Indemnified Claim without the Indemnified Party's prior written consent (which will not be unreasonably withheld, conditioned or delayed) unless the judgment or proposed settlement involves only the payment of money damages by Insurer and does not impose an injunction or other equitable relief on the Indemnified Party, or adversely impact the Plans' Tax Qualified status, or admit liability on the part of any Indemnified Party, (v) the Indemnified Party will not consent to the entry of any judgment or enter into any settlement with respect to such Indemnified Claim without Insurer's prior written consent (which will not be unreasonably withheld, conditioned or delayed) and (vi) the Indemnified Party may consent to the entry of any judgment or enter into any settlement with respect to the Uncovered Claim without Insurer's prior consent.

(d) If Insurer has not assumed the defense of an Indemnified Claim after receiving notice of the Indemnified Claim, (i) the Indemnified Party may defend against the Indemnified Claim in any manner it reasonably determines to be appropriate, (ii) Insurer will reimburse the Indemnified Party promptly and periodically for the costs of defending against the Indemnified Claim (including reasonable attorneys' fees and expenses allocable to such Indemnified Claim) to the extent such costs are Liabilities for which the Indemnified Party is entitled to indemnification under this Article IX and (iii) Insurer will remain responsible for any costs the Indemnified Party may incur resulting from the Indemnified Claim to the extent such costs are Liabilities for which the Indemnified Party is entitled to indemnification under this Article IX . If the Indemnified Party has not assumed the defense of an Uncovered Claim as contemplated by Section 9.2(c) , Insurer is not responsible in any way for any Liabilities or Orders resulting from not responding to or defending such Uncovered Claim, provided that Insurer's responsibility for Indemnified Claims will not be altered in any way.

(e) Notwithstanding anything in this Agreement to the contrary, this Article IX will not be deemed to supersede or extinguish any rights of Independent Fiduciary or Company pursuant to the IF Engagement Letter.

9.3 Claims, Payment and Treatment of Payments . On each occasion that any Indemnified Party is entitled to indemnification under this Article IX , Insurer will, at each such time, promptly pay the amount of such indemnification within ten Business Days following receipt of an invoice for out-of-pocket expense, fees or other amounts for which it is liable under this Article IX .

ARTICLE X

TERMINATION

10.1 Termination of Agreement . This Agreement may be terminated at any time prior to the Closing as provided below:

(a) By the mutual written consent of Company and Insurer;

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(b) By Company if the Closing has not occurred by or on [* * *] (the " Outside Date ") or any state of facts or circumstances exists as a result of which there is no reasonable probability that the Closing can occur by or on the Outside Date, provided that such right to terminate this Agreement will not be available to Company if any failure of Company to perform any of its obligations under this Agreement required to be performed at or prior to the Closing has been the cause of, or resulted in, the failure of the Closing to occur on or before the Outside Date and such action or failure to perform constitutes a breach of this Agreement;

(c) By Company if there has been a material misrepresentation or breach of any representation, warranty, covenant or agreement on the part of Insurer or Independent Fiduciary contained in this Agreement that is not cured within 20 Business Days following notice of such misrepresentation or breach to Insurer or Independent Fiduciary, as applicable;

(d) By Insurer if the Closing has not occurred by or on the Outside Date or any state of facts or circumstances exists as a result of which there is no reasonable probability that the Closing can occur by or on the Outside Date, provided that such right to terminate this Agreement will not be available to Insurer if any action of Insurer or the failure of Insurer to perform any of its obligations under this Agreement required to be performed at or prior to the Closing has been the cause of, or resulted in, the failure of the Closing to occur on or before the Outside Date and such action or failure to perform constitutes a breach of this Agreement; and

(e) By Insurer if there has been a material misrepresentation or breach of any representation, warranty, covenant or agreement on the part of Company or Independent Fiduciary contained in this Agreement that is not cured within 20 Business Days following notice of such misrepresentation or breach to Company or Independent Fiduciary, as applicable.

10.2 Effect of Termination and Survival . If this Agreement is terminated pursuant to Section 10.1 , all rights and obligations of the Parties under this Agreement will terminate upon such termination and will become null and void, except that Sections 1.1 , 3.11 , 4.6 and 5.14 , Article XI and this Section 10.2 will survive any such termination and no Party will otherwise have any Liability to any other Party under this Agreement. However, nothing in this Section 10.2 will relieve any Party from Liability for any fraud or willful and material breach of this Agreement.

10.3 Extension .

(a) If the Closing is not reasonably expected to occur on or prior to the Outside Date, either Company or Insurer may deliver a request to Insurer or Company, respectively, on or before 5:00 p.m. Eastern Time on the Outside Date that the Outside Date be extended (a " Notice of Extension "), in which case the Outside Date will be deemed to be extended to [* * *], subject to Sections 10.3(b) and 10.3(c) .

(b) If Company or Insurer timely delivers a Notice of Extension to Insurer, the Parties may agree to one of the following:

(i) Preserve the existing deal terms in place as of [* * *].

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(ii) Insurer will use its Commercially Reasonable Efforts to deliver to Company and Independent Fiduciary a written, good-faith revision of the Base Annuity Premium by [* * *] (a " Re-Pricing Offer "), [* * *]. Company will deliver a written response to Insurer either accepting or rejecting the Re-Pricing Offer within ten Business Days following Insurer's delivery of the Re-Pricing Offer to Company. If Company accepts the Re-Pricing Offer, the Parties will set a new Target Closing Date as soon as reasonably practicable and cooperate in good faith for a period of ten Business Days to negotiate any amendments to this Agreement, the Ancillary Agreements and the Spreadsheet necessary to implement the Re-Pricing Offer. If the Company rejects the Re-Pricing Offer or the Parties do not agree on amendments necessary to implement the Re-Pricing Offer within the time frame in this Section 10.3(b) , this Agreement will immediately terminate.

(iii) An alternative approach mutually agreeable to both Insurer and Company.

For the avoidance of doubt, the consummation of the transactions based on this Section 10.3(b) will be subject to the confirmation by Independent Fiduciary that the Transactions continue to satisfy the ERISA Requirements.

(c) If the Parties are unable to mutually reach terms to proceed with a Closing, this Agreement will immediately terminate.

ARTICLE XI

MISCELLANEOUS

11.1 Expenses . Except as otherwise expressly set forth in this Agreement, each Party will bear its own costs and expenses incurred in connection with this Agreement and the Transactions, including all fees of law firms, commercial banks, investment banks, accountants, public relations firms, experts and consultants.

11.2 Entire Agreement . This Agreement and the Ancillary Agreements constitute the entire agreement among the Parties and supersede any prior understandings, agreements or representations (whether written or oral) by, among or between the Parties, written or oral, to the extent they relate in any way to the subject matter of this Agreement. Notwithstanding the foregoing, the IF Engagement Letter will not be superseded by this Agreement or the Ancillary Agreements and nothing in this Agreement will affect the terms or enforceability of the Group Annuity Contracts.

11.3 Amendments and Waivers . No amendment of this Agreement or the Ancillary Agreements will be valid unless it is agreed to in writing and signed or acknowledged by each Party, except as expressly provided in this Agreement. No waiver of any breach of this Agreement will be construed as an implied amendment or agreement to amend or modify any provision of this Agreement. No waiver by any Party of any default, misrepresentation or breach of warranty or covenant under this Agreement, whether intentional or not, will be valid unless it is agreed to in writing and signed or acknowledged by the Party making such waiver, nor will such waiver be deemed to extend to any prior or subsequent default, misrepresentation or breach of warranty or covenant under this Agreement or affect in any way any rights arising by virtue of any prior or

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subsequent default, misrepresentation or breach of warranty or covenant. No conditions, course of dealing or performance, understanding or agreement purporting to modify, vary, explain or supplement the terms or conditions of this Agreement will be binding unless this Agreement is amended or modified in writing pursuant to the first sentence of this Section 11.3. Except where a specific period for action or inaction is provided in this Agreement, no delay on the part of any Party in exercising any right, power or privilege under this Agreement will operate as a waiver thereof.

11.4 Succession and Assignment. This Agreement will be binding on and inure to the benefit of the Parties and their respective successors and permitted assigns. No Party may assign either this Agreement or any of its rights, interests or obligations under this Agreement without the prior written consent of the other Parties, and any attempt to do so will be null and void *ab initio*, without any effect whatsoever.

11.5 Notices. All notices, requests, demands, claims, certifications and other communications under this Agreement will be in writing except as expressly provided in this Agreement. Any notice, request, demand, claim or other communication under this Agreement will be deemed duly given (a) when delivered personally to the recipient, (b) one Business Day after being sent to the recipient by reputable overnight courier service (charges prepaid), addressed as set forth below or (c) when transmitted, if sent by facsimile or electronic mail, to those indicated below (including the recipient):

If to Company:

PPG Industries, Inc.
One PPG Place
Attention: Treasurer and General Counsel
Facsimile: 412.434.4416 and 412.434.2490
Email: jankowski@ppg.com and gbost@ppg.com

With copies (which will not constitute notice to Company) to:

K&L Gates LLP
210 Sixth Avenue
Pittsburgh, PA 15222
Attention: Charles R. Smith and Rikki A. Sapolich
Facsimile: 412.355.6501
Email: charles.smith@klgates.com and rikki.sapolich@klgates.com

If to Insurer:

Metropolitan Life Insurance Company
200 Park Avenue,
New York, NY 10166
Attention: Wayne Daniel
Email: wdaniel@metlife.com

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With a copy (which will not constitute notice to Insurer) to:

MetLife
One Financial Center
Boston, MA 02111
Attention: Michael J. Lacek
Facsimile: 617.578.5538
Email: mjlacek@metlife.com

If to Independent Fiduciary:

State Street Global Advisers
One Lincoln Street
Boston, MA 02111
Attention: Denise Sisk
Facsimile: 617.946.9434
Email: denise_sisk@ssga.com

With a copy (which will not constitute notice to Independent Fiduciary) to:

Groom Law Group
1701 Pennsylvania Avenue, N.W.
12th Floor
Washington, DC 20006
Attention: Thomas Roberts
Facsimile: 202.659.4503
Email: troberts@groom.com

Any Party may change the address to which notices, requests, demands, claims and other communications under this Agreement are to be delivered by giving the other Parties notice in the manner set forth in this Section 11.5 .

11.6 Governing Law . Except to the extent preempted by applicable federal Law, this Agreement will be governed by, and construed in accordance with, the Laws of the State of New York, without regard to any principles of conflicts of law thereof that would permit or require the application of the Laws of another jurisdiction.

11.7 Submission to Jurisdiction and Service of Process .

(a) Each of the Parties irrevocably and unconditionally submits to the jurisdiction of any state or federal court, and only federal court if diversity of Parties exists, sitting in New York County, New York in any claim, counterclaim, demand, cause of action, controversy or dispute arising out of or relating to this Agreement or any Ancillary Agreement and agrees that all claims in respect of such Action may be heard and determined in any such court. Each Party also agrees not to bring any Action arising out of or relating to this Agreement or any Ancillary Agreement in any other court. Each of the Parties irrevocably and unconditionally waives any objection to personal

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jurisdiction, venue and any defense of inconvenient forum to the maintenance of any Action so brought and waives any bond, surety or other security that might be required of any other Party with respect thereto. Any Party may make service on any other Party by sending or delivering a copy of the process to the Party to be served at the address and in the manner provided for the giving of notices in Section 11.5 , provided that nothing in this Section 11.7 will affect the right of any Party to serve legal process in any other manner permitted by Law.

(b) Notwithstanding anything to the contrary in this Agreement, the Parties acknowledge and agree that in the course of any Action, if Insurer elects to, based on the opinion of counsel, produce or otherwise disclose [* * *], to Company, Independent Fiduciary or their respective Affiliates or Representatives (for the avoidance of doubt, nothing in this Agreement will obligate Insurer or any of its Affiliates or Representatives to make such disclosure), Company and Independent Fiduciary will consent to the filing of, and the Parties will use all reasonable efforts to move for and urge the court to adopt, a protective order implementing terms reasonably satisfactory to Insurer to limit the disclosure of [* * *] and ensure the strictly confidential treatment thereof, including requiring [* * *] or copies thereof following the conclusion of any such Action. However, neither Company nor Independent Fiduciary will be required to take any steps that would compromise its ability to prosecute or defend the Action or otherwise prejudice its position (including any restrictions on the ability of its experts to review, access and analyze any materials that Company (or Independent Fiduciary, as applicable) determines are relevant to such prosecution or defense). Further, Company and Independent Fiduciary agree that it will not be considered unreasonable for Insurer to seek a protective order that prevents disclosure of such information in such a way that it would be reasonably likely to become available to competitors of Insurer or other third parties not involved in any such Action.

11.8 Waivers of Jury Trial . EACH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY ACTION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT, THE ANCILLARY AGREEMENTS OR THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT.

11.9 Specific Performance . The Parties agree that irreparable damage would occur if any of the provisions of this Agreement or the Ancillary Agreements were not performed in accordance with their specific terms or were otherwise breached. Accordingly, each Party will be entitled to an injunction or injunctions to prevent breaches of this Agreement or any Ancillary Agreement by the breaching Party and to enforce specifically the terms and provisions of this Agreement or any Ancillary Agreement, in addition to any other remedy to which such Party is entitled at law or in equity. Without limiting the generality of the foregoing, the Parties acknowledge and agree that Insurer will be entitled to enforce specifically Independent Fiduciary's obligations in this Agreement to irrevocably direct Plan Trustee to act in accordance with this Agreement and the Ancillary Agreements. The Parties further agree that (a) by seeking the remedies provided for in this Section 11.9 , a Party will not in any respect waive its right to seek any other form of relief that may be available to such Party under this Agreement or any Ancillary Agreement (including monetary damages) if the remedies provided for in this Section 11.9 are not available or otherwise are not granted and (b) nothing in this Section 11.9 will require any Party to institute any Action for (or

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limit any Party's right to institute any Action for) specific performance under this Section 11.9 prior or as a condition to exercising any termination right under Article X , nor will the commencement of any Action pursuant to this Section 11.9 or anything in this Section 11.9 restrict or limit any Party's right to terminate this Agreement in accordance with Article X or pursue any other remedies under this Agreement that may be available then or thereafter.

11.10 Severability . The invalidity or unenforceability of any provision of this Agreement will not affect the validity or enforceability of any other provisions of this Agreement, provided that if any of the material provisions of this Agreement are held illegal, invalid or unenforceable, this entire Agreement will be null and void. If any of the provisions of this Agreement are held by a court or other tribunal of competent jurisdiction to be illegal, invalid or unenforceable, such provisions will be limited or eliminated only to the minimum extent necessary so that this Agreement will otherwise remain in full force and effect.

11.11 No Third Party Beneficiaries . This Agreement will not confer any rights or remedies on any Person other than the Parties and their respective successors and permitted assigns.

11.12 Counterparts and Facsimile and Electronic Signatures . This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. This Agreement or any counterpart may be executed and delivered to the recipients in Section 11.5 by electronic communications by portable document format (.pdf), each of which will be deemed an original.

11.13 Survival of Representations and Warranties . The representations and warranties of the Parties will survive the Closing until the expiry of the relevant statute of limitations for contractual claims under the Laws of the State of New York.

11.14 Confidentiality .

(a) It is understood that each Party has received and will receive Confidential Information from the other Parties in connection with the negotiation of this Agreement and the Ancillary Agreements as well as in previous discussions and interactions involving the matters addressed by this Agreement and the Ancillary Agreement. Except as set forth in this Agreement (including except as expressly permitted or contemplated by the other provisions of this Agreement), the Parties will not use the Confidential Information of another disclosing Party except in connection with the performance of their respective obligations under this Agreement and will not disclose (and will cause their respective Representatives, Affiliates and Affiliates' Representatives not to disclose) any Confidential Information received from another Party, the Plans or their respective Representatives, Affiliates or Affiliates' Representatives, except to such receiving Party's Representatives, Affiliates and Affiliates' Representatives, who have a need to know and have agreed to maintain the confidentiality of Confidential Information in accordance with this Section 11.14 (or are otherwise bound). The disclosing Party is and will be an express third party beneficiary of such agreement by such receiving Party's Representatives, Affiliates and Affiliates' Representatives.

(b) Section 11.14(a) will not apply with respect to Confidential Information that the receiving Party can demonstrate is or was:

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(i) Already known to the receiving Party or its Affiliates or Representatives prior to the confidential disclosure by the disclosing Party or any of its affiliates or Representatives, other than through a breach of an obligation of confidentiality of the disclosing Party;

(ii) Independently developed by the receiving Party or its Affiliates or Representatives not in violation or breach of this Agreement or any other confidentiality obligation to the disclosing Party (such as the Confidentiality Agreements or any retention agreement with a firm or professional in connection with this Agreement);

(iii) Already known to the public without breach of confidence by the receiving Party or any of its Affiliates;

(iv) Received by the receiving Party from a third party without restrictions on its use in favor of the disclosing Party, whether by Law or Contract; or

(v) Subject to prior compliance with Section 11.14(c) , required to be disclosed pursuant to any applicable Law, stock exchange regulation, regulatory agreement, provision or request, court order, subpoena or other legal process.

(c) Section 11.14(a) will not apply from and after the Closing to restrict the use or disclosure by Insurer of any Confidential Information related to Priced Lives, Annuity Payments or [* * *] received from another disclosing Party, provided that Insurer will use such Confidential Information only in compliance with all applicable Laws relating to privacy of personally identifying information. For the avoidance of doubt, this Section 11.14(c) does not apply to Confidential Information regarding Company or the Plans (other than to the extent required in connection with the Group Annuity Contracts).

(d) Except as otherwise provided in this Agreement, if any Party, its Representatives, its Affiliates or its Affiliates' Representatives receives a request, subpoena, demand or order for disclosure or becomes required by Law or stock exchange rule or regulation to disclose any Confidential Information (a " Compelled Disclosing Party "), such Compelled Disclosing Party will promptly, and in no case more than five Business Days following receipt of such a request, subpoena, demand or order (so long as it is (i) permitted by Law or by such request, subpoena, demand or Order of a Governmental Authority to provide such notification and (ii) not contrary to any applicable request, demand or order of, or agreement with, a Governmental Authority), notify the other Parties to afford them the opportunity to object or seek a protective order or other remedy, including a protective order requiring Confidential Information to be submitted under seal and for the return and destruction of Confidential Information or copies thereof following the conclusion of any Action, prior to the disclosure of any such Confidential Information. The Compelled Disclosing Party will, to the extent (i) permitted by Law or by the request, subpoena, demand or Order of a Governmental Authority requiring the disclosure of Confidential Information and (ii) not contrary to any applicable request, demand or order of, or agreement with, a Governmental Authority, cooperate with the other Party's efforts to obtain such protective order at such other Party's cost and expense. If such protective order or other remedy is not sought or obtained, only that portion of Confidential Information that the Compelled Disclosing Party in good faith believes

is legally required to be provided may be disclosed and such Compelled Disclosing Party will request that appropriate confidential treatment will be accorded to such Confidential Information.

(e) Any engagement letter between any of the Parties on the one hand and each professional engaged in connection with this Agreement on the other will include undertakings by such professional to maintain the confidentiality of Confidential Information in accordance with this Section 11.14 and to clearly mark any reports or other work product prepared in connection with such engagement as confidential and not subject to disclosure except as permitted by this Section 11.14 .

(f) Insurer will comply with all applicable Laws and regulations, including those laws relating to privacy, data protection and the safeguarding of such information, governing the confidential information of any Covered Life, Contingent Life or Beneficiary. Insurer will comply in all material respects with any internal written policies relating to the confidential information of any Covered Life, Contingent Life or Beneficiary as in effect from time to time.

(g) The Parties acknowledge and agree that this Section 11.14 will supersede the Confidentiality Agreements. Notwithstanding the foregoing, this Section 11.14(g) will not relieve any party from Liability for breaches of the Confidentiality Agreement that have occurred prior to the date of this Agreement.

11.15 Waiver of Punitive Damages . To the fullest extent permitted by Law, and notwithstanding any other provision of this Agreement, none of the Parties will be liable to any other Party for any punitive or exemplary damages of any nature in respect of matters arising out of this Agreement or the Ancillary Agreements, whether arising out of breach of contract, negligence, tort, strict liability or any other legal or equitable principle. The foregoing sentence will not preclude recovery of amounts claimed in an Indemnified Claim to the extent that claims for such amounts are brought by a third party and subject to indemnification under this Agreement.

11.16 Intellectual Property .

(a) Insurer is, and the other Parties acknowledge that Insurer is, the sole owner of all spreadsheets and formulas, including the methodologies reflected on the spreadsheets and manuals on the Identified USB Flash Drive and that all such materials (collectively, the " IP Materials ") constitute Insurer's valuable and proprietary know-how. The foregoing remains true even with respect to any IP Materials or know-how incorporated or reproduced in the work product of any arbitrator or its staff or any other professional engaged in connection with this Agreement. In furtherance of the foregoing, Company and Independent Fiduciary assign to Insurer all right, title and interest that such Party has or may have in any IP Materials, and any intellectual property rights therein and thereto, conceived, invented, authored or reduced to practice in connection with this Agreement and the Ancillary Agreements. For the avoidance of doubt, neither Company nor Independent Fiduciary assigns, conveys or impairs any right to the IP Materials that any other Person may have or assert. Insurer grants Independent Fiduciary, Company and, pursuant to the applicable engagement letter, if any, any arbitrator or its staff or any other professional engaged in connection with this Agreement, the limited, non-exclusive, non-transferable, royalty-free right, on an as-is, where-is basis, to use such IP Materials solely in connection with the Transactions and proceedings

CONFIDENTIAL MATERIAL REDACTED AND SEPARATELY FILED WITH THE COMMISSION

contemplated by this Agreement and the Ancillary Agreements. No Person having use of such information will have any rights in connection with such information except as specifically granted by the foregoing sentence.

(b) The Parties agree that, other than as provided in Section 11.16(a) , Company takes no position as to the portion of the IP Materials that may be owned by Insurer or Company or any other Person or as to whether Section 11.14(b) is applicable or not applicable to all or any portion of the IP Materials (and does not waive any of its rights under Section 11.14(b)). Further, Insurer agrees that it will, in good faith, attempt to avoid involving Company in any action related to enforcement against any other Person of any intellectual property or confidentiality rights with respect to the IP Materials.

[Remainder of page intentionally left blank]

CONFIDENTIAL MATERIAL REDACTED AND SEPARATELY FILED WITH THE COMMISSION

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

METROPOLITAN LIFE INSURANCE COMPANY

By: /s/ Keith McDonagh
Name: Keith McDonagh
Title: Senior Vice President

PPG INDUSTRIES, INC.

By: /s/ John A. Jankowski
Name: John A. Jankowski
Title: Vice President and Treasurer

STATE STREET BANK AND TRUST COMPANY , acting solely in its capacity as Independent Fiduciary of the Plans

By: /s/ Denise Sisk
Name: Denise Sisk
Title: Managing Director

Exhibit 12

PPG INDUSTRIES, INC. AND CONSOLIDATED SUBSIDIARIES
Computation of Ratio of Earnings to Fixed Charges
(Dollars in millions)

	Six Months Ended June 30	Year Ended December 31				
	2016	**2015**	**2014**	**2013**	**2012**	**2011**
Earnings:						
Earnings before income taxes and net earnings in equity affiliates	$ 1,138	$ 1,865	$ 1,308	$ 1,229	$ 814	$ 936
Plus:						
Fixed charges exclusive of capitalized interest	107	213	280	284	281	280
Amortization of capitalized interest	3	6	6	6	6	6
Adjustments for equity affiliates	1	77	5	9	12	19
Total	**$ 1,249**	**$ 2,161**	**$ 1,599**	**$ 1,528**	**$ 1,113**	**$ 1,241**
Fixed Charges:						
Interest expense incl amortization of debt discount/premium and debt expense	$ 62	$ 126	$ 187	$ 197	$ 210	$ 210
Rentals - portion representative of interest	45	87	93	87	71	70
Fixed charges exclusive of capitalized interest	107	213	280	284	281	280
Capitalized interest	4	9	16	10	8	9
Total	**$ 111**	**$ 222**	**$ 296**	**$ 294**	**$ 289**	**$ 289**
Ratio of earnings to fixed charges	**11.2**	**9.7**	**5.4**	**5.2**	**3.9**	**4.3**

Note: The financial information of all prior periods has been reclassified to reflect discontinued operations

Exhibit 31.1

PRINCIPAL EXECUTIVE OFFICER CERTIFICATION

I, Michael H. McGarry, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PPG Industries, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 22, 2016

/s/ Michael H. McGarry

Michael H. McGarry
President and Chief Executive Officer

Exhibit 31.2

PRINCIPAL FINANCIAL OFFICER CERTIFICATION

I, Frank S. Sklarsky, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PPG Industries, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 22, 2016

/s/ Frank S. Sklarsky

Frank S. Sklarsky
Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of PPG Industries, Inc. for the period ended June 30, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael H. McGarry, President and Chief Executive Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.

/s/ Michael H. McGarry

Michael H. McGarry
President and Chief Executive Officer
July 22, 2016

A signed original of this written statement required by Section 906 has been provided to PPG Industries, Inc. and will be retained by PPG Industries, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of PPG Industries, Inc. for the period ended June 30, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Frank S. Sklarsky, Executive Vice President and Chief Financial Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.

/s/ Frank S. Sklarsky

Frank S. Sklarsky
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

July 22, 2016

A signed original of this written statement required by Section 906 has been provided to PPG Industries, Inc. and will be retained by PPG Industries, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.