

**Sheet Metal Workers' National Pension Fund** 

**Actuarial Valuation and Review as of January 1, 2015** 

This report has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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October 2, 2015

Board of Trustees Sheet Metal Workers' National Pension Fund Fairfax, Virginia

Dear Trustees:

We are pleased to submit the Actuarial Valuation and Review as of January 1, 2015. It establishes the funding requirements for the current year and analyzes the preceding year's experience. It also summarizes the actuarial data and includes the actuarial information that is required to be filed with Form 5500 to federal government agencies.

The census information upon which our calculations were based was prepared by the Fund Office, under the direction of Ms. Debbie Elkins. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Daniel V. Ciner, MAAA, Enrolled Actuary.

We look forward to reviewing this report with you at your next meeting and to answering any questions you may have.

Sincerely,

Segal Consulting, a Member of the Segal Group

Bv:

Lall Bachan, ASA, MAAA, EA Senior Vice President and Actuary Richard G. Gerasta Senior Vice President Daniel V. Ciner, MAAA, EA Senior Vice President and Actuary

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#### **SECTION 1: ACTUARIAL VALUATION SUMMARY**

#### Introduction

There are several ways of evaluating funding adequacy for a pension plan. In monitoring the Plan's financial position, the Trustees should keep in mind all of these concepts.

Funding Standard Account	The ERISA Funding Standard Account measures the cumulative difference between actual contributions and the minimum funding standard. If actual contributions exceed the minimum funding standard, the excess is called the credit balance. If actual contributions fall short of the minimum funding standard, a funding deficiency occurs.
Zone Information	The Pension Protection Act of 2006 (PPA'06) called on plan sponsors to actively monitor the projected Funding Standard Account credit balance, the funded percentage (the ratio of the actuarial value of assets to the present value of benefits earned to date) and cash flow sufficiency. Based on these measures, plans are then categorized as critical ( <i>Red Zone</i> ), endangered ( <i>Yellow Zone</i> ), or neither ( <i>Green Zone</i> ). The Multiemployer Pension Reform Act of 2014 (MPRA), among other things, made the zone provisions permanent.
 Solvency Projections	Pension plan funding anticipates that, over the long term, both contributions and investment earnings will be needed to cover benefit payments and expenses. To the extent that contributions are less than benefit payments, investment earnings and fund assets will be needed to cover the shortfall. In some situations, a plan may be faced with insufficient assets to cover its current obligations and may need assistance from the Pension Benefit Guaranty Corporation (PBGC). MPRA provides options for some plans facing insolvency.
Withdrawal	FRISA provides for assessment of withdrawal liability to employers who withdraw from a multiemployer plan based on



Liability

ERISA provides for assessment of withdrawal liability to employers who withdraw from a multiemployer plan based on unfunded vested benefit liabilities. A separate report is available.

#### Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future uncertain obligations of a pension plan. As such, it will never forecast the precise future contribution requirements or the precise future stream of benefit payments. In any event, it is an estimated forecast — the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:



Plan Provisions Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may require the award of a Social Security disability pension as a condition for receiving a disability pension from the plan. If so, changes in the Social Security law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the Trustees to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.



Participant Information

An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. For most plans, it is not possible nor desirable to take a snapshot of the actual workforce on the valuation date. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.



Financial Information Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the auditor. Some plans include assets, such as private equity holdings, real estate, or hedge funds, that are not subject to valuation by reference to transactions in the marketplace. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.



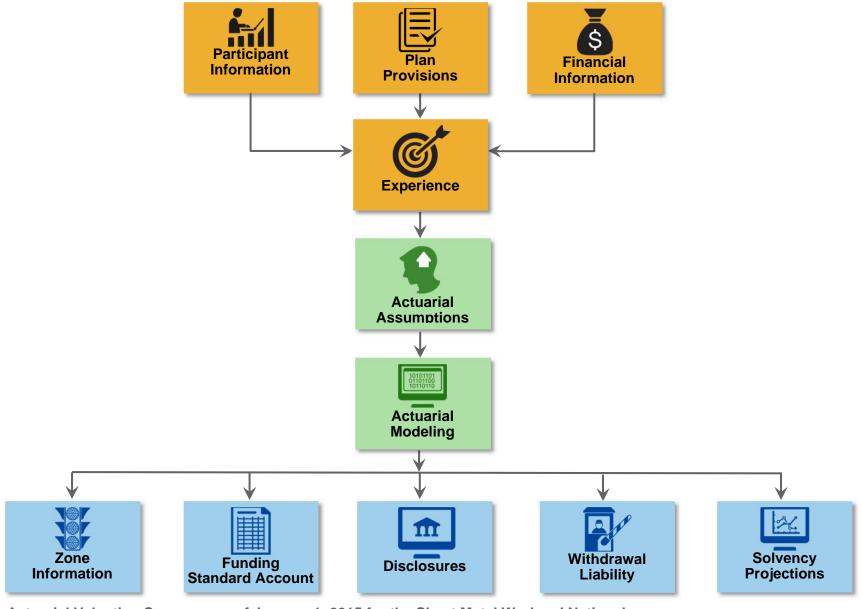
In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost of the plan (the total of benefits and expenses paid out over time). In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared for use by the Trustees. It includes information for compliance with federal filing requirements and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- Actuarial results in this report are not rounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in employment levels and investment losses, not just the current valuation results.
- ERISA requires a plan's enrolled actuary to provide a statement for inclusion in the plan's annual report disclosing any event or trend that the actuary has not taken into account, if, to the best of the actuary's knowledge, such an event or trend may require a material increase in plan costs or required contribution rates. If the Trustees are currently aware of any event that was not considered in this valuation and that may materially increase the cost of the Plan, they must advise Segal, so that we can evaluate it and take it into account.
- A certification of "zone" status under PPA'06 is a separate document from the actuarial valuation.
- Segal does not provide investment, legal, accounting, or tax advice. This valuation is based on Segal's understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Trustees should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the
  event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in
  the next valuation.
- Segal's report shall be deemed to be final and accepted by the Trustees upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

#### **ACTUARIAL VALUATION OVERVIEW**



Section 1: Actuarial Valuation Summary as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

This January 1, 2015 actuarial valuation report is based on draft financial and demographic information as of that date. Changes subsequent to that date are not reflected unless specifically identified, and could affect future results. Segal is prepared to work with the Trustees to analyze the effects of any subsequent developments. The current year's actuarial valuation results follow.

#### A. Developments Since Last Valuation

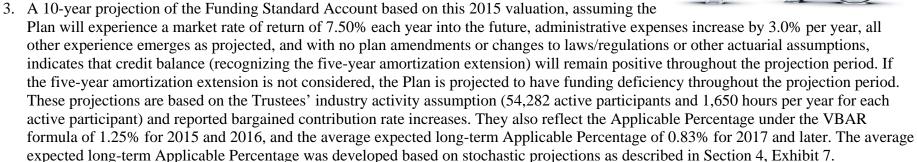
- 1. On December 16, 2014, the Multiemployer Pension Reform Act of 2014 (MPRA) was enacted. MPRA expanded and clarified various zone status rules, made changes to withdrawal liability rules for plans in the red or yellow zones, enabled suspension of benefits for deeply troubled plans, and granted PBGC flexibility in facilitating plan mergers and approving partitions.
- 2. Based on past experience and future expectations, the following assumptions were changed for this year's valuation:
  - > Mortality assumption for non-retired participants was changed to the RP-2014 Blue Collar Employee Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
  - Mortality assumption for beneficiaries and non-disabled pensioners was changed to the RP-2014 Blue Collar Healthy Annuitant Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
  - Mortality assumption for disabled pensioners was changed to the RP-2014 Disabled Retiree Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014; and
  - > Annual administrative expense assumption was changed to \$14,100,000, payable monthly.
- 3. The rate of return on the market value of plan assets was 6.1% for the 2014 Plan Year. The rate of return on the actuarial value of assets was 6.4% as a result of the asset valuation method. As of January 1, 2015, the actuarial value of assets of \$4.14 billion represents 103.5% of the market value of assets of \$4.00 billion.
  - The current assumed long-term rate of return on investments is 7.50%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various asset classes, we will continue to monitor the Plan's actual and anticipated investment returns.
- 4. Based on the 3-year average market value investment return of 10.27% for the Plan Years ended December 31, 2011-2013, the Applicable Percentage under the Variable Benefit Accrual Rate (VBAR) formula is 1.25% for the 2015 Plan Year. Based on the 3-year average market value investment return of 12.89% for the Plan Years ended December 31, 2012-2014, the Applicable Percentage under the VBAR formula is 1.25% for the 2016 Plan Year. Details of the VBAR formula are provided in Section 4, Exhibit 8.



- 5. Contribution rates increase in accordance with the Alternative Options of the Funding Improvement Plan. Since benefit accruals are tied to contribution rates, increases in contribution rates are recognized as plan amendments. The average contribution rate increased from \$4.35 per hour as of January 1, 2014 to \$4.64 per hour as of January 1, 2015.
- 6. Based on the census data used for this valuation (as of December 31, 2014), 75.7% of active participants were covered under the First Alternative Option (38.0% covered under 55/30 contracts), 23.7% were covered under the Default Option, 0.4% were covered under the benefit structure applicable to groups that did not continue bargaining increases under the Alternative Options and 0.2% were covered under the Second Alternative Option (none covered under 60/30 contracts).
- 7. The 2015 certification, previously issued on March 31, 2015, was based on the liabilities calculated in the 2014 actuarial valuation, projected to December 31, 2014, and estimated asset information as of December 31, 2014. The Plan was classified as endangered (Yellow Zone) status because the Plan was not critical (Red Zone) status and the projected funded percentage was less than 80%. In addition, the Plan was not projected to be in critical status for any of the succeeding five Plan Years. This projection was based on the Trustees' industry activity assumption that the active population will remain level at 54,282 active participants and, on average, contributions will be made for 1,650 hours per year for each active participant.

#### B. Funded Percentage and Funding Standard Account

- 1. Based on this January 1, 2015 actuarial valuation, the funded percentage as of that date is 59.3%. This will be reported on the 2015 Annual Funding Notice.
- 2. The credit balance in the Funding Standard Account as of December 31, 2014 was \$177.4 million (recognizing the five-year amortization extension), an increase of \$57.5 million from the prior year.





#### C. Solvency Projections

1. Based on this valuation, the current value of assets plus future investment earnings and contribution income is projected to exceed benefit payments and administrative expenses for at least 15 years, assuming experience is consistent with January 1, 2015 assumptions and there are no future changes in the Plan provisions, law/regulations, or actuarial assumptions. The projected assets are shown on page 36. If requested by the Trustees, we can perform additional projections of the financial status of the Plan.



#### D. Withdrawal Liability

1. The actuarial present value of vested Plan benefits for withdrawal liability purposes is not the same figure as determined for FASB ASC 960 purposes because the two calculations involve different actuarial assumptions. A separate detailed report on withdrawal liability is available.



#### Summary of Key Valuation Results

	2014	2015
Certified Zone Status	Endangered	Endangered
Demographic Data:		
Number of active participants	54,282	54,319
Number of inactive participants with vested rights	34,338	34,450
Number of alternate payees in deferred status	486	546
Number of retired participants and beneficiaries	45,909	46,501
Number of alternate payees in payment status	924	1,009
Assets:		
Market value of assets (MVA) <sup>1</sup>	\$3,818,123,174	\$3,999,233,547
<ul> <li>Actuarial value of assets (AVA)<sup>1</sup></li> </ul>	3,940,831,853	4,140,279,634
AVA as a percent of MVA	103.2%	103.5%
Statutory Funding Information:		
Minimum funding standard <sup>2</sup>	\$252,678,598	\$292,271,676
Maximum deductible contribution	12,267,459,031	12,895,044,525
Expected employer contributions for coming Plan Year	389,895,664	418,779,120
Actual Contributions <sup>3</sup>	414,524,637	<del></del>
Annual Funding Notice percentage	59.1%	59.3%
<ul> <li>Funding Standard Account deficiency projected in Plan Year ending<sup>4</sup></li> </ul>	N/A	N/A
Cost Elements on an Funding Standard Account Basis:		
<ul> <li>Normal cost, including administrative expenses<sup>5</sup></li> </ul>	\$96,701,186	\$167,259,204
Actuarial accrued liability	6,671,514,903	6,987,384,126
Unfunded actuarial accrued liability (based on AVA)	2,730,683,050	2,847,104,492

Excludes receivable liability payments of \$35,711,069 for 2014 and and \$28,268,777 for 2015

<sup>&</sup>lt;sup>2</sup>Amount required to maintain a \$0 credit balance

<sup>&</sup>lt;sup>3</sup>Includes withdrawal liability payments, liquidated damages, and adjustments for withdrawal liability receivable

<sup>&</sup>lt;sup>4</sup>Recognizes the five-year amortization extension; contribution rate increases are based current collective bargaining agreements only

<sup>&</sup>lt;sup>5</sup>Reflects 0.75% Applicable Percentage under VBAR formula for 2014 and 1.25% for 2015

#### Comparison of Funded Percentages

	Funded Percentages as of January 1 2014 2015		20	15
			Liabilities	Assets*
1. Present Value of Future Benefits	53.1%	51.8%	\$7,985,837,584	\$4,140,279,634
2. PPA'06 Liability and Annual Funding Notice	59.1%	59.3%	6,987,384,126	4,140,279,634
3. Accumulated Benefits Liability	57.2%	57.2%	6,987,384,126	3,999,233,547
4. Current Liability	33.8%	34.1%	11,721,679,532	3,999,233,547

<sup>\*</sup>Excludes receivable withdrawal liability payments of \$28,268,777

#### Notes:

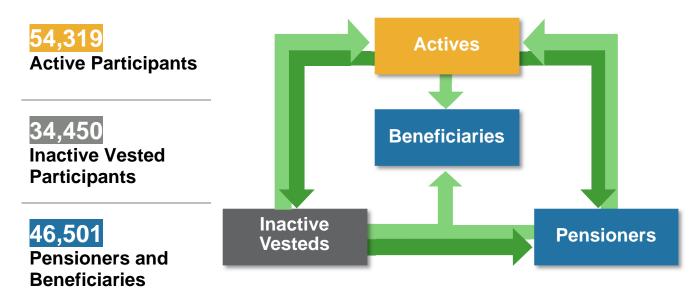
- 1. Includes the value of benefits earned through the valuation date (accrued benefits) plus the value of benefits projected to be earned in the future for current participants based on the 1.25% Applicable Percentage under the VBAR formula for 2015 and 2016 and the long-term average expected Applicable Percentage of 0.83% for 2017 and thereafter. The liabilities used to calculate the January 1, 2014 funded percentage were developed assuming the Applicable Percentage would remain level at 0.75%. Used to develop the actuarial accrued liability, based on long-term funding investment return assumption of 7.50% and the actuarial value of assets. The funded percentage using market value of assets is 50.1% for 2015 and 51.4% for 2014.
- 2. Measures present value of accrued benefits using the current participant census and financial data. As defined by the PPA'06, based on long-term funding investment return assumption of 7.50%, the Unit Credit actuarial cost method, and the actuarial value of assets.
- 3. Provides present value of accrued benefits for disclosure in the audited financial statements, based on long-term funding investment return assumption of 7.50%, and the market value of assets.
- 4. Used to determine maximum tax-deductible contributions and is reported on Schedule MB to Form 5500. Based on the present value of accrued benefits, using a prescribed mortality table and investment return assumption of 3.51% for 2015 and 3.64% for 2014, and the market value of assets. The funded percentage is also shown on the Schedule MB if it is less than 70%.

Disclosure: These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations or the need for the amount of future contributions.

#### **SECTION 2: ACTUARIAL VALUATION RESULTS**

#### Participant Information

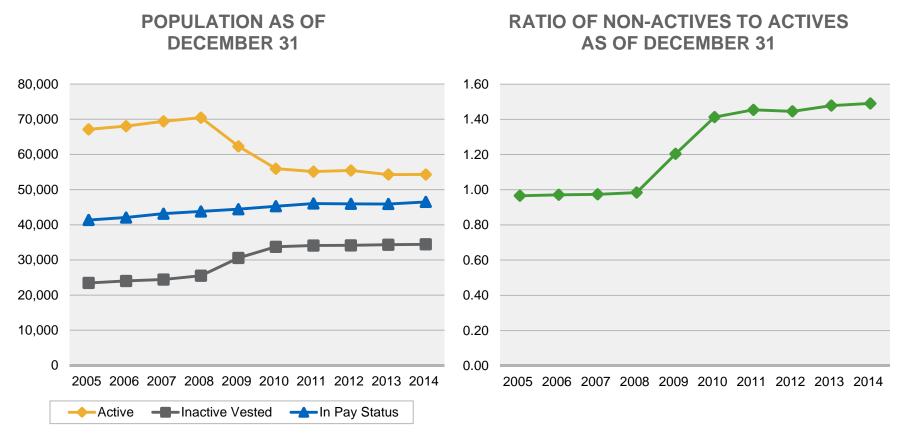
> The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants as of December 31, 2014. More detailed information for this valuation year, and the preceding year can be found in Section 3, Exhibit A.



Note: The above counts do not include the 1,555 alternate payees that are also included in the valuation

#### Changes in Population Over Time

- The number of active participants has declined from its peak of 70,448 as of December 31, 2008 to its lowest level of 54,282 as of December 31, 2013 and slightly increased to 54,319 as of December 31, 2014. The number in pay status has increased steadily over the past ten years.
- There are now more than 1.5 non-active participants for each active participant.
- More details on the historical information are included in Section 3, Exhibit B.



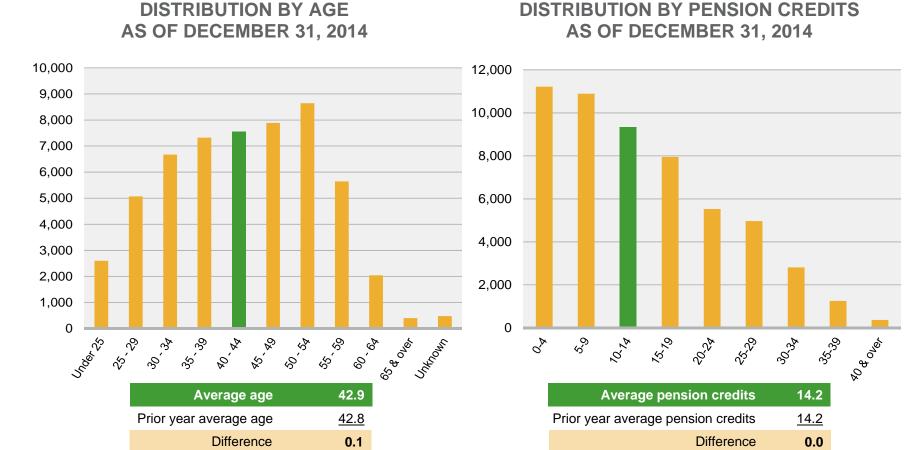
Note: Alternate payees are excluded from the above charts for 2013 and later.

Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 



#### **Active Participants**

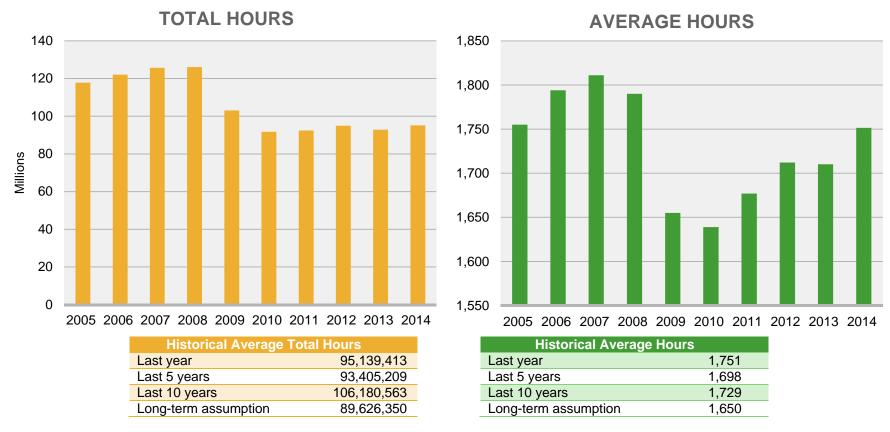
- > There were 54,319 active participants in this year's valuation compared to 54,282 in the prior year.
- > There were 477 active participants with unknown age compared to 280 in the prior year. The actuarial calculations were adjusted for missing information by assuming that it was the same as information provided for other active participants with similar known characteristics.
- The age and service distribution is included in Section 4, Exhibit 3.



Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### Historical Employment

- The total and average hours for each of the last 10 years is shown below. More details on the historical information are included in *Section* 3, *Exhibit C*.
- The industry activity assumption used for the 2015 actuarial zone certification was that the number of active participants would remain at the December 31, 2013 level of 54,282 actives for all future years and, on the average, contributions will be made for each active for 1,650 hours each year. The long-term assumption for projecting contribution income is 1,650 hours for each active participant. The experience in recent years has shown a trend of higher per capita hours. We look to the Trustees for guidance as to whether this continues to be reasonable for the long term.



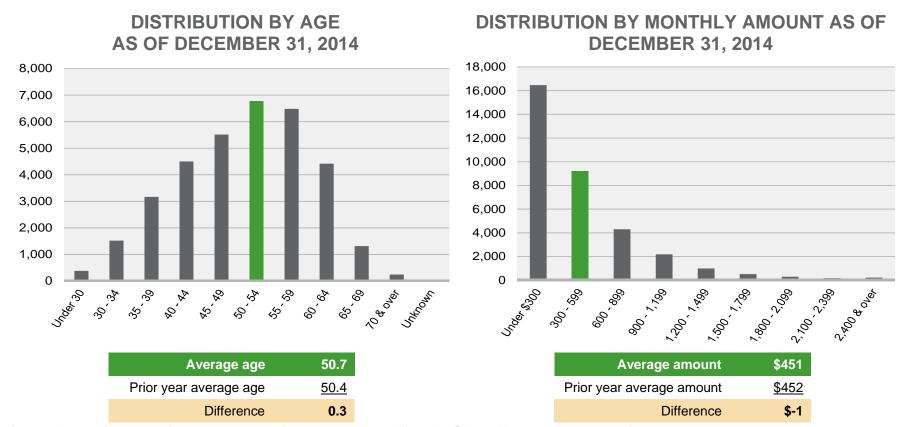
Note: The total hours are based on total hours reported in the census data.

Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund



#### Inactive Vested Participants

- > A participant who is not currently active and has satisfied the requirements for, but has not yet commenced, a pension is considered an "inactive vested" participant.
- > There were 34,364 inactive vested participants in this year's valuation compared to 34,246 in the prior year.
- > There were 38 inactive vested with unknown age compared to 36 in the prior year. The actuarial calculations were adjusted for missing information by assuming that it was the same as information provided for other active participants with similar known characteristics.
- In addition, there were 86 beneficiaries and 546 alternate payees eligible for deferred benefits in this valuation as compared to 92 beneficiaries and 486 alternate payees in the prior year. These participants are excluded from the charts shown below.



Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### New Pensions Awarded

	То	tal	Nor	mal	Standa	rd Early	Specia	l Early*	55/30 (	(60/30)	Disal	bility
Year Ended Dec 31	Number	Average Amount /Ret. Age	Number	Average Amount /Ret. Age	Number	Average Amount /Ret. Age	Number	Average Amount /Ret. Age	Number	Average Amount /Ret. Age	Number	Average Amount /Ret. Age
2005	1,992	\$1,163	249	\$557	308	\$488	909	\$1,035	376	\$2,577	150	\$777
		59.2		66.6		59.8		59.2		58.1		48.7
2006	1,875	1,110	281	547	285	466	790	1,070	302	2,571	217	794
		59.5		66.6		59.6		59.6		57.7		51.9
2007	1,934	1,113	287	599	449	723	713	1,084	266	2,566	219	907
		59.7		66.6		59.8		59.8		57.9		52.0
2008	1,763	951	342	547	387	545	732	972	214	2,343	88	740
		60.1		66.5		59.9		59.1		57.6		49.8
2009	1,765	838	411	609	499	342	597	1,008	174	2,357	84	542
		60.8		66.8		59.6		60.1		57.5		49.5
2010	1,909	868	457	564	516	406	630	1,001	200	2,516	106	523
		60.8		67.0		59.5		60.1		57.8		49.9
2011	1,856	967	505	582	333	434	701	1,065	229	2,453	88	543
		61.0		66.5		60.1		60.1		57.6		49.4
2012	1,644	972	465	651	387	386	499	1,190	214	2,383	79	536
		61.4		66.6		60.6		60.5		57.9		49.8
2013	2,065	930	592	645	563	440	585	1,090	240	2,552	85	477
		61.5		66.8		60.6		60.3		57.5		49.9
2014	1,962	916	576	626	569	402	504	1,077	245	2,544	68	611
		61.7		66.7		60.9		60.2		57.5		51.1

<sup>\*</sup>Includes those that retired on Age 62 Pension.

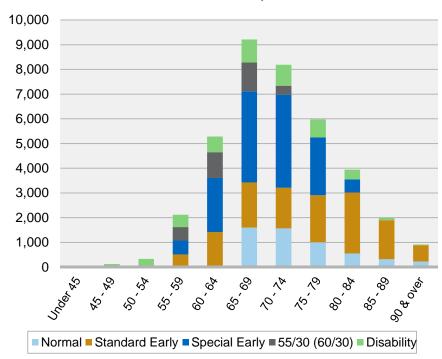
Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

#### Pay Status Information

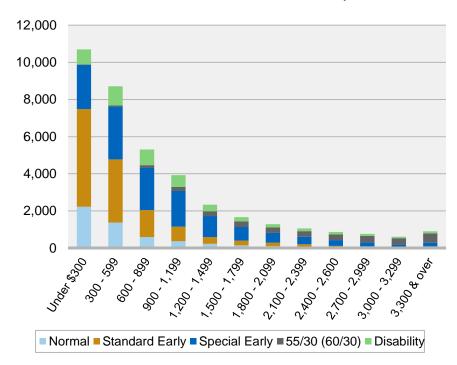
2014	vs.	2015
37,648 pensioners, 8,172 beneficiaries, and 924 alternate payees	$\rightarrow$	38,074 pensioners, 8,352 beneficiaries, and 1,009 alternate payees
\$36,628,519 total monthly benefits received	$\rightarrow$	\$37,576,578 total monthly benefits received

#### **Distribution of Pensioners**

# PENSIONERS BY TYPE AND BY AGE AS OF DECEMBER 31, 2014



# PENSIONERS BY TYPE AND MONTHLY AMOUNT AS OF DECEMBER 31, 2014



Note: Amounts shown on this page include one-twelfth of annual COLA payments.

Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### Progress of Pension Rolls Over the Past Ten Years

#### IN PAY STATUS AT YEAR END

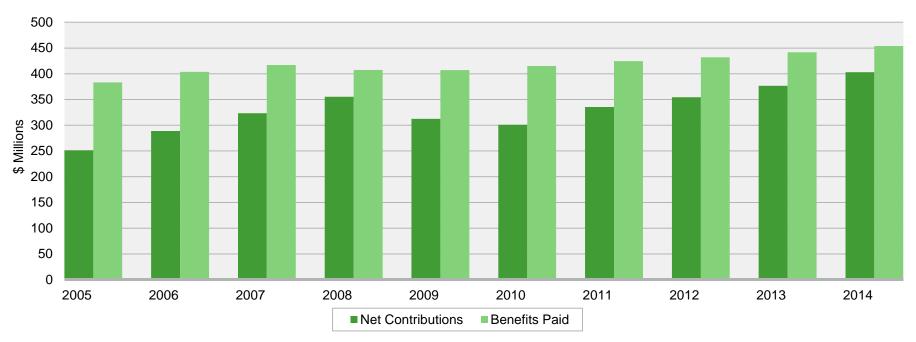
Year	Number	Average Age	Average Amount <sup>1</sup>	Terminations <sup>2</sup>	Additions <sup>3</sup>
2005	34,623	70.2	\$852	1,316	1,992
2006	35,098	70.4	873	1,400	1,875
2007	35,747	70.5	852	1,285	1,934
2008	36,019	70.8	861	1,491	1,763
2009	36,408	71.0	854	1,376	1,765
2010	36,892	71.2	850	1,425	1,909
2011	37,321	71.4	857	1,427	1,856
2012	37,165	71.5	868	1,800	1,644
2013	37,648	71.7	877	1,582	2,065
2014	38,074	71.8	888	1,536	1,962

<sup>&</sup>lt;sup>1</sup>Includes one-twelfth of annual COLA payments <sup>2</sup>Terminations include pensioners who died or were suspended during the prior plan year, less those suspended who were reinstated. <sup>3</sup>Additions to the pension rolls include new pensions awarded.

#### Financial Information

- > Pension plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments.
- A summary of these transactions for the valuation year and the prior year, including investment activity on an actuarial basis, is presented in *Section 3, Exhibit E*.
- > Contributions and other non-investment income net of administrative expenses were \$402,936,672 for the year.
- > Benefit payments during the year totaled \$454,020,194. They are projected to increase to approximately \$602 million 10 years from now.

## COMPARISON OF NET EMPLOYER CONTRIBUTIONS AND BENEFITS PAID



Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### Determination of Actuarial Value of Assets

- Because the Plan is funded by negotiated contribution rates, it is desirable to have a level and predictable pension plan cost from one year to the next. The Trustees have approved an asset valuation method that recognizes changes in market value over time. Under this valuation method, the full value of market fluctuations is not recognized in a single year.
- There are \$141,046,087 of net losses deferred for future recognition. The determination of the actuarial value of assets also reflects Funding Relief under the Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010.

1	Market value of assets, December 31, 2014			\$3,999,233,547
		Original	Unrecognized	
2	Calculation of unrecognized return	Amount <sup>1</sup>	Return <sup>2</sup>	
	(a) Year ended December 31, 2014	-\$52,249,711	-\$41,799,770	
	(b) Year ended December 31, 2013	417,070,836	250,242,502	
	(c) Year ended December 31, 2012	130,519,310	52,207,724	
	(d) Year ended December 31, 2011	-281,483,650	-56,296,730	
	(e) Year ended December 31, 2010	192,248,053	0	
	(f) Year ended December 31, 2008	-1,151,332,711	<u>-345,399,813</u>	
	(g) Total unrecognized return			-\$141,046,087
3	Preliminary actuarial value: (1) - (2g)			4,140,279,634
4	Adjustment to be within 20% corridor			0
5	Final actuarial value of assets as of December 31, 2014: (3) + (4)			4,140,279,634
6	Actuarial value as a percentage of market value: (5) ÷ (1)			103.5%
7	Amount deferred for future recognition: (1) - (5)			-\$141,046,087

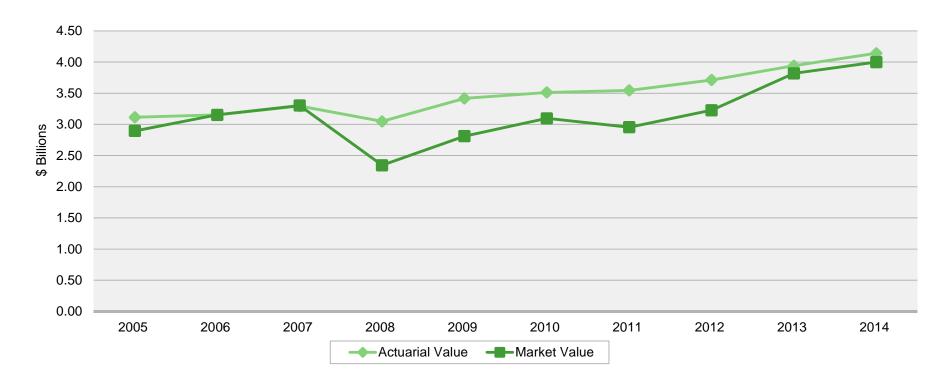
<sup>&</sup>lt;sup>1</sup>Total return minus expected return on a market value basis

<sup>&</sup>lt;sup>2</sup>Recognition at 10% per year over 10 years for year ended December 31, 2008 due to Funding Relief and 20% per year over 5 years for remaining years

#### Asset History

- > Both the actuarial value and the market value of assets are representations of the Plan's financial status.
- > The actuarial value is significant because it is subtracted from the Plan's total actuarial accrued liability to determine the portion that is not funded and is used to determine the PPA'06 funded percentage.
- > Amortization of the unfunded accrued liability is an important element in the contribution requirements of the Plan.

#### **ACTUARIAL VALUE OF ASSETS VS. MARKET VALUE OF ASSETS**



Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### Actuarial Experience

- > To calculate the cost requirements of the Plan, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. For contribution requirements to remain stable, assumptions should approximate experience and expectations for the future, which may require adjustments in the assumptions from time to time.
- > Each year actual experience is measured against the assumptions and differences are reflected in the contribution requirement. If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.
- > Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the experience was a short-term development and that, over the long run, experience will return to assumed levels.
- > The net experience variation for the year ending December 31, 2014, other than investment experience, was 0.44% of the projected actuarial accrued liability from the prior valuation, and was not significant when compared to that liability.

1	Net loss from investments	-\$43,115,454
2	Net gain from administrative expenses	908,163
3	Net loss from other experience	-29,886,396
4	Net experience loss: 1 + 2 + 3	<u>-\$72,093,687</u>

#### Actuarial Value Investment Experience

- The actuarial rate of return for a given year is the investment income net of investment expenses, expressed as a percentage of the average actuarial value of assets during the year.
- Net investment income consists of expected investment income at the actuarially assumed rate of return, and the adjustment for market value changes. Investment expenses are subtracted.
- The actuarial value of assets does not yet fully recognize past net investment losses. As a result, the effect of favorable future investment returns will be dampened as recognition of past net investment losses is phased in. Therefore, the rate of return on an actuarial basis may fall below the assumed rate of return as unrecognized losses are reflected, even if market returns are favorable.

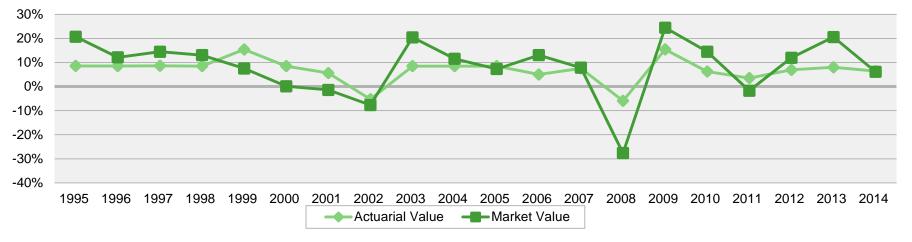
#### **EXPERIENCE FOR THE YEAR ENDED DECEMBER 31, 2014**

1	Net investment income	\$250,531,303
2	Average actuarial value of assets	3,915,290,092
3	Rate of return: 1 ÷ 2	6.40%
4	Assumed rate of return	7.50%
5	Expected net investment income: 2 x 4	\$293,646,757
6	Actuarial loss: 1 - 5	<u>-\$43,115,454</u>

#### Historical Investment Returns

- > As expected, the experience in the past few years has shown both higher and lower rates of return than the long-term assumption. However, actuarial planning is long term, as the obligations of a pension plan are expected to continue for the lifetime of its active and inactive participants.
- > Based upon this experience, the current asset allocation, and future expectations, we have maintained the assumed long-term rate of return of 7.50%. We will continue to monitor the Plan's actual and anticipated investment returns and may revise our assumed long-term rate of return in a future actuarial valuation, if warranted.

#### MARKET VALUE AND ACTUARIAL RATES OF RETURN FOR YEARS ENDED DECEMBER 31



Average Rates of Return	Actuarial Value	Market Value
Most recent three-year average return:	7.11%	12.89%
Most recent five-year average return:	6.25%	10.09%
Most recent 10-year average return:	6.09%	6.86%
20-year average return:	6.56%	7.43%

Note: Each year's yield is weighted by the average asset value in that year. The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value.

The actuarial value investment returns for 1999, 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

#### Non-Investment Experience

#### Administrative Expenses

- > Administrative expenses for the year ended December 31, 2014 totaled \$12,014,240, resulting in a gain of \$908,163 for the year.
- > Based on information from the Fund Office regarding the anticipated expenses for the 2015 Plan Year and the increase in the PBGC premiums under the Multiemployer Pension Reform Act of 2014, we have increased the assumption from \$12,400,000 to \$14,100,000, payable monthly, for the current year.

#### Mortality Experience

- > Mortality experience (fewer or more than expected deaths) yields actuarial gains or losses.
- > The average number of deaths for nondisabled pensioners over the past four years was 1,356 per year compared to 1,316 projected deaths per year. The average number of deaths for disabled pensioners over the past four years was 210 per year compared to 246 projected deaths per year.
- > We have updated our mortality assumptions for this year's valuation, and we will continue to monitor the mortality experience and the margin for future mortality improvement.

#### Other Experience

There are other differences between projected and actual experience that appear when a new valuation is compared with projections from the previous valuation. These include the extent of turnover among the participants, retirement experience (earlier or later than projected), and the number of disability retirements.

#### **Net Liability Experience**

The net loss from mortality and other experience amounted to \$29,886,396 for the last plan year, which is 0.4% of the projected actuarial accrued liability. This was primarily due to fewer deaths than expected among pensioners at earlier ages and less net turnover among active participants than expected.

#### **Actuarial Assumptions**

- There were changes in assumptions since the prior valuation. These changes are summarized below:
  - Mortality assumption for non-retired participants was changed to the RP-2014 Blue Collar Employee Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
  - Mortality assumption for beneficiaries and non-disabled pensioners was changed to the RP-2014 Blue Collar Healthy Annuitant Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
  - Mortality assumption for disabled pensioners was changed to the RP-2014 Disabled Retiree Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014; and
  - Annual administrative expense assumption was changed to \$14,100,000, payable monthly.
- The actuarial assumptions and methods can be found in Section 4, Exhibit 7.

#### **Plan Provisions**

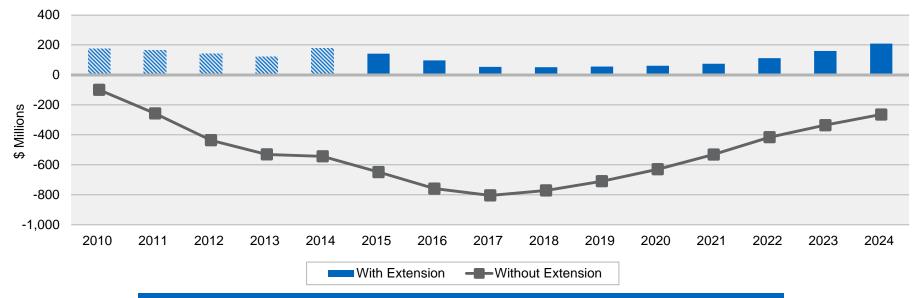
- Contribution rates increase in accordance with the Alternative Options of the Funding Improvement Plan. Since benefit accruals are tied to contribution rates, increases in contribution rates are recognized as plan amendments. The average contribution rate increased from \$4.35 per hour as of January 1, 2014 to \$4.64 per hour as of January 1, 2015.
- > A summary of all plan provisions can be found in Section 4, Exhibit 8.

#### Funding Standard Account

- > A summary of the ERISA minimum funding requirements, including the exceptions that can apply, is included in Section 3, Exhibit I.
- > On December 31, 2014, the Funding Standard Account had a credit balance of \$177,390,712 (recognizing the five-year amortization extension), as shown on the 2014 Schedule MB, a summary of which is shown in *Section 3, Exhibit I*. Contributions meet the legal requirement on a cumulative basis if that account shows no deficiency.
- > The minimum funding standard for the year beginning January 1, 2015 is \$292,271,675.
- > The minimum contribution necessary to avoid a decrease in the current credit balance for the year beginning January 1, 2015 is \$452,686,639.
- > Based on the assumption that 54,319 participants will work an average of 1,650 hours at a \$4.6725 average contribution rate (including reported bargained increases), the contributions projected for the year beginning January 1, 2015 are \$418,779,120. Taking into account these contributions, the credit balance is projected to decrease by approximately \$35.2 million to \$142.2 million as of December 31, 2015.

#### Funding Standard Account Projection

- > A 10-year projection of the Funding Standard Account based on this 2015 valuation, assuming the Plan will experience a market rate of return of 7.50% each year into the future, administrative expenses increase by 3.0% per year, all other experience emerges as projected, and with no plan amendments or changes to laws/regulations or other actuarial assumptions, indicates that credit balance (recognizing the five-year amortization extension will remain positive throughout the projection period. If the five-year amortization extension is not considered, the Plan is projected to have funding deficiency throughout the projection period. These projections reflect the Applicable Percentage under the VBAR formula of 1.25% for 2015 and 2016, and the average expected long-term Applicable Percentage of 0.83% for 2017 and later. The average expected long-term Applicable Percentage was developed based on stochastic projections as described in Section 4, Exhibit 7.
- > The chart shows the credit balance projection based on the Trustees' industry activity assumption (54,282 active participants and 1,650 hours per year for each active participant) and reported bargained contribution rate increases. It also assumes that current accumulated deferred investment gains and losses are recognized in accordance with the asset valuation method.



Additional scenarios would demonstrate sensitivity to investment return, employment and other alternative assumptions.

Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

#### Pension Protection Act of 2006

#### 2015 Actuarial Status Certification

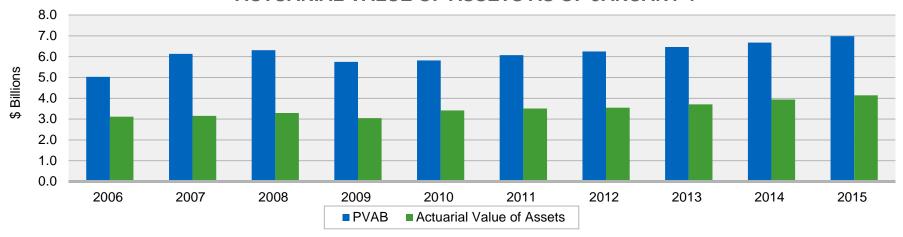
- > PPA'06 requires trustees to actively monitor their plans' financial prospects to identify emerging funding challenges so they can be addressed effectively. Details are shown in Section 3, Exhibit K.
- The 2015 certification, previously issued on March 31, 2015, was based on the liabilities calculated in the 2014 actuarial valuation, projected to December 31, 2014, and estimated asset information as of December 31, 2014. This projection was based on the Trustees' industry activity assumption that the active population will remain level at 54,282 active participants and, on average, contributions will be made for 1,650 hours per year for each active participant.
- The Plan was classified as endangered (Yellow Zone) status because the Plan was not critical (Red Zone) status and the projected funded percentage was less than 80%. In addition, the Plan was not projected to be in critical status for any of the succeeding five Plan Years.

#### Funding Improvement Plan Update

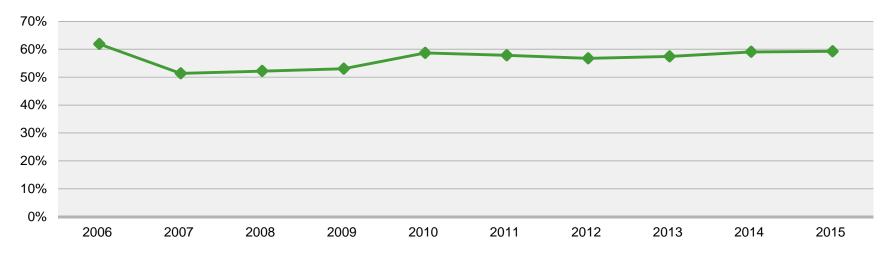
- Section 432(c)(6) requires that the Trustees annually update the Funding Improvement Plan and Schedules.
- The Plan's Funding Improvement Period is the 10-year period beginning January 1, 2017.
- Segal will continue to assist the Trustees in evaluating and updating the Funding Improvement Plan.

#### PPA'06 Funded Percentage Historical Information

### PRESENT VALUE OF ACCRUED BENEFITS (PVAB) VS. **ACTUARIAL VALUE OF ASSETS AS OF JANUARY 1**



#### PPA '06 FUNDED PERCENTAGE AS OF JANUARY 1

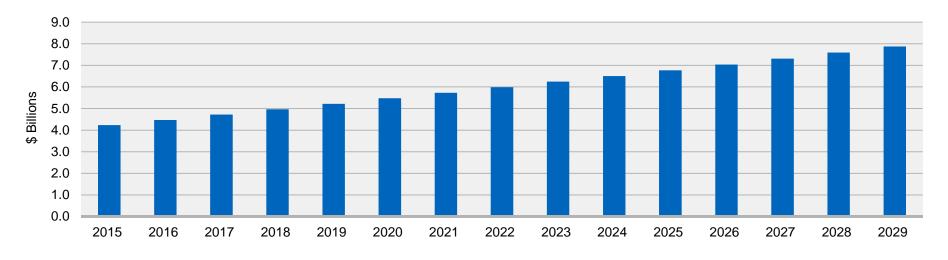


Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

#### Solvency Projection

- > PPA'06 requires Trustees to monitor plan solvency the ability to pay benefits and expenses when due. The Multiemployer Pension Reform Act of 2014 further classifies plans that are projected to become insolvent with 15 or 20 years as "critical and declining." See *Section 3, Exhibit K* for more information.
- > Projections using the current actuarial valuation assumptions show the Plan is not expected to be insolvent within 15 years, based on the negotiated contribution rates, the current plan of benefits and the Trustees' industry activity assumption. This projection also reflects the Applicable Percentage under the VBAR formula of 1.25% for 2015 and 2016, and the average expected long-term Applicable Percentage of 0.83% for 2017 and later.

#### PROJECTED ASSETS AS OF DECEMBER 31



Additional scenarios would demonstrate sensitivity to investment return, employment and other alternative assumptions.

Section 2: Actuarial Valuation Results as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

## Withdrawal Liability Overview

- > The actuarial present value of vested Plan benefits for withdrawal liability purposes is not the same figure as determined for FASB ASC 960 purposes because the two calculations involve different actuarial assumptions. A separate detailed report on withdrawal liability is available.
- > A detailed report on withdrawal liability is available.

### Disclosure Requirements

## **Annual Funding Notice**

- > PPA'06 requires the annual funding notice to be provided to participants, employers, unions and government agencies. The notice must be sent by 120 days after the end of the plan year. The actuarial information to be provided in the annual funding notice is shown in Section 3, Exhibit H.
- > The value of plan benefits earned to date as of January 1, 2015 is \$6,987,384,126 using the long-term funding interest rate of 7.50%. As the actuarial value of assets is \$4,140,279,634, the Plan's funded percentage is 59.3%, compared to 59.1% in the prior year. The funded percentage is one measure of a plan's funded status. It is not indicative of how well funded a plan may be in the future, especially in the event of plan termination.

#### **Current Liability**

> ERISA also requires the disclosure by the actuary of the funding percentage based on "current liability" assumptions and the market value of assets, if it is less than 70%. The Plan's current liability as of January 1, 2015 is \$11,721,679,532 using an interest rate of 3.51%, based on 30-year U.S. Treasury security rates. As the market value of assets is \$3,999,233,547, this funded current liability percentage is 34.1%. This will be disclosed on the 2015 Schedule MB of IRS Form 5500. Details are shown in *Section 4*, *Exhibit 5*.

#### **Accounting Information**

- > The Financial Accounting Standards Board (FASB) requires determination of the present value of accumulated plan benefits the single-sum value of the benefits, vested or not, earned by participants as of the valuation date. Additional details on the present value of the accumulated plan benefits can be found in *Section 4*, *Exhibit 6*.
- > These present values are determined based on the plan of benefits reflected for Funding Standard Account purposes and are based upon the actuarial assumptions used to determine the ERISA funding costs of the ongoing Plan. These are not appropriate liability measurements for other purposes such as if the Plan were to terminate.

### **SECTION 3: SUPPLEMENTARY INFORMATION**

#### **EXHIBIT A - TABLE OF PLAN COVERAGE**

	Year Ended D	ecember 31	
			Change from
Category	2013	2014	Prior Year
Participants in Fund Office tabulation	56,104	56,481	0.7%
Less: Employees with less than one pension credit	1,822	2,162	N/A
Active participants in valuation:			
First Alternative Schedule without 55/30			
Number	20,796	20,455	-1.6%
<ul> <li>Percentage of total active population</li> </ul>	38.3%	37.7%	N/A
<ul> <li>Average contribution rate as of the valuation date</li> </ul>	\$2.89	\$3.04	5.2%
First Alternative Schedule with 55/30			
<ul> <li>Number</li> </ul>	20,225	20,614	1.9%
<ul> <li>Percentage of total active population</li> </ul>	37.3%	38.0%	N/A
<ul> <li>Average contribution rate as of the valuation date</li> </ul>	\$7.63	\$8.16	6.9%
Default Schedule			
<ul> <li>Number</li> </ul>	12,911	12,896	-0.1%
<ul> <li>Percentage of total active population</li> </ul>	23.8%	23.7%	N/A
<ul> <li>Average contribution rate as of the valuation date</li> </ul>	\$1.61	\$1.63	1.2%
No contribution increases but previously covered under an Alternative Schedule			
Number	324	228	-29.6%
<ul> <li>Percentage of total active population</li> </ul>	0.6%	0.4%	N/A
Average contribution rate as of the valuation date	\$2.48	\$1.35	-45.6%
Second Alternative Schedule without 60/30			
Number	26	126	384.6%
Percentage of total active population	0.0%	0.2%	N/A
Average contribution rate as of the valuation date	\$3.98	\$2.73	-31.4%
Second Alternative Schedule with 60/30			
Number	-	-	-
Total			
Number	54,282	54,319	0.1%
Average contribution rate as of the valuation date	\$4.35	\$4.64	6.7%
Average age	42.8	42.9	N/A
Average pension credits	14.2	14.2	N/A
Number with unknown age	280	477	70.4%
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Section 3: Supplementary Information as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

# EXHIBIT A - TABLE OF PLAN COVERAGE (CONTINUED)

	Year Ended D	ecember 31	
Category	2013	2014	Change from Prior Year
Total active vested participants	43,851	43,050	-1.8%
Inactive participants with rights to a pension:			
• Number	34,246	34,364	0.3%
Average age	50.4	50.7	N/A
Average monthly benefit	\$452	\$451	-0.1%
Number with unknown age	36	38	5.6%
Beneficiaries with rights to deferred payments	92	86	-6.5%
Alternate payees with rights to deferred payments	486	546	12.3%
Pensioners:			
Number in pay status	37,648	38,074	1.1%
Average age	71.7	71.8	N/A
<ul> <li>Average monthly benefit*</li> </ul>	\$877	\$888	1.3%
Number in suspended status	89	59	-33.7%
Beneficiaries:			
Number in pay status	8,172	8,352	2.2%
Number in suspended status	0	16	N/A
Alternate payees in pay status	924	1,009	9.2%
*			

<sup>\*</sup>Includes one-twelfth of annual cola payments

# **EXHIBIT B - PARTICIPANT POPULATION**

Year Ended December 31	Active Participants	Inactive Vested Participants <sup>1</sup>	Pensioners and Beneficiaries <sup>2</sup>	Ratio of Non-Actives to Actives
2005	67,130	23,452	41,372	0.97
2006	68,046	24,020	42,077	0.97
2007	69,408	24,436	43,166	0.97
2008	70,448	25,517	43,794	0.98
2009	62,321	30,569	44,444	1.20
2010	55,940	33,749	45,281	1.41
2011	55,131	34,122	46,049	1.45
2012	55,440	34,161	45,974	1.45
2013	54,282	34,338	45,909	1.48
2014	54,319	34,450	46,501	1.49

<sup>&</sup>lt;sup>1</sup>Includes deferred beneficiaries; excludes deferred alternate payees for 2013 and later <sup>2</sup>Excludes alternate payees in pay status for 2013 and later

**EXHIBIT C - EMPLOYMENT HISTORY** 

	Total Hours of Contributions		Active	Participants	Average Hours of Contributions		
Year Ended December 31	Number	Percent Change	e Number	Percent Change	Number	Percent Change	
2005	117,802,302	-1.0%	67,130	-1.7%	1,755	0.7%	
2006	122,074,466	3.6%	68,046	1.4%	1,794	2.2%	
2007	125,691,762	3.0%	69,408	2.0%	1,811	0.9%	
2008	126,093,952	0.3%	70,448	1.5%	1,790	-1.2%	
2009	103,117,103	-18.2%	62,321	-11.5%	1,655	-7.5%	
2010	91,693,289	-11.1%	55,940	-10.2%	1,639	-1.0%	
2011	92,440,381	0.8%	55,131	-1.4%	1,677	2.3%	
2012	94,923,571	2.7%	55,440	0.6%	1,712	2.1%	
2013	92,829,393	-2.2%	54,282	-2.1%	1,710	-0.1%	
2014	95,139,413	2.5%	54,319	0.1%	1,751	2.4%	
		F	ive-year average	hours:	1,698		
		Т	en-year average	hours:	1,729		

<sup>&</sup>lt;sup>1</sup>The total hours of contributions are based on total hours reported in the census data.

**EXHIBIT D - COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL** 

		As of	December 31	, 2013			As of E	Pecember 31	, 2014	
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31*	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31*
001	374	43.96	16.41	1,594.20	\$6.59	382	44.40	16.43	1,644.04	\$7.00
002	1,157	42.42	14.88	1,628.89	9.56	1,123	42.52	15.04	1,624.48	10.28
003	369	42.47	13.55	1,828.60	4.91	367	42.50	13.50	1,768.02	5.28
004	193	42.12	15.35	1,731.23	0.45	206	43.15	15.67	1,773.46	0.51
005	519	42.18	10.22	1,770.39	3.75	490	42.88	10.91	1,795.35	4.06
007	996	41.19	13.43	1,688.52	1.44	1,020	41.22	13.41	1,781.70	1.47
009	728	42.44	12.76	1,703.41	0.50	757	42.62	12.77	1,725.63	0.54
010	2,416	42.53	14.55	1,659.76	3.84	2,502	42.74	14.59	1,678.96	4.13
012	975	41.71	14.45	1,630.87	7.39	999	41.68	14.33	1,692.58	7.84
015	523	44.19	9.87	1,773.85	2.49	542	43.39	9.70	1,830.65	2.51
016	1,342	41.55	11.80	1,703.89	1.74	1,477	41.29	11.34	1,763.36	1.79
017	1,290	42.75	15.02	1,679.53	9.35	1,290	42.77	15.18	1,689.82	9.89
018	2,347	43.22	16.17	1,737.24	8.06	2,441	42.98	15.90	1,778.26	8.53
019	246	45.21	15.01	1,808.57	3.60	266	45.99	14.98	1,820.05	3.62
020	2,196	42.79	15.08	1,688.46	4.79	2,152	43.03	15.35	1,721.92	5.12
023	209	43.65	13.95	1,544.48	1.69	210	43.50	13.62	1,639.96	1.70
024	1,244	42.90	15.24	1,744.09	3.65	1,189	43.04	15.46	1,738.11	3.93
025	487	45.90	17.69	1,619.71	9.93	496	46.05	17.73	1,639.00	10.83
026	129	41.18	13.64	1,480.33	2.60	133	40.66	12.85	1,614.38	2.75
027	401	44.91	16.59	1,410.38	9.55	386	45.33	16.95	1,558.90	10.22
028	2,336	43.20	14.37	1,601.71	11.65	2,493	42.94	14.02	1,646.04	12.13
029	160	38.50	13.23	1,775.88	4.36	168	38.22	13.07	1,722.56	4.64
032	296	44.25	13.20	1,569.37	3.55	276	44.38	12.90	1,690.01	3.57
033	2,192	42.30	13.94	1,625.69	5.34	2,143	42.63	14.27	1,703.02	5.83
036	1,699	44.24	16.17	1,542.64	2.33	1,659	44.36	16.13	1,576.80	2.48
038	493	43.24	15.43	1,560.00	9.43	484	43.77	15.85	1,582.71	10.17
040	325	44.45	15.77	1,526.24	1.43	368	44.62	15.29	1,662.28	0.84

Section 3: Supplementary Information as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

# EXHIBIT D - COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL (CONTINUED)

			As of December 31, 2014							
Local	Number of Members	Average Age	December 31  Average  Service	Average Hours	Average Rate as of 12/31*	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31*
044	190	43.60	14.51	1,392.90	\$0.75	192	44.09	14.99	1,456.43	\$0.93
045	365	40.25	14.16	1,707.46	5.82	402	39.97	13.65	1,781.70	6.10
046	358	40.81	13.99	1,635.69	2.50	350	41.00	14.25	1,651.30	2.70
048	213	43.03	16.51	1,719.52	6.37	204	43.46	16.65	1,844.46	6.91
049	379	43.23	14.09	1,678.06	4.75	403	42.81	13.40	1,742.30	4.97
054	665	42.49	13.75	1,851.26	5.02	739	42.22	12.61	1,892.14	5.03
055	894	42.22	12.86	1,726.56	1.44	850	42.51	13.42	1,706.64	1.47
058	133	42.67	11.28	1,365.91	6.30	149	43.16	11.42	1,481.90	7.21
063	287	44.20	15.31	1,595.77	7.09	309	44.62	15.42	1,613.09	7.46
066	1,673	43.08	14.27	1,603.41	3.57	1,799	43.51	14.20	1,686.57	3.59
067	806	41.24	12.57	1,748.14	6.17	729	41.54	13.09	1,711.92	6.55
068	486	42.67	11.36	1,754.76	4.80	455	43.03	11.73	1,756.30	4.17
071	291	41.95	14.29	1,615.66	5.77	310	42.13	14.03	1,783.57	6.23
073	1,854	45.98	17.32	1,708.09	4.15	1,890	46.49	17.66	1,749.36	4.43
080	67	39.81	8.24	1,351.96	4.86	65	40.67	8.79	1,286.46	6.27
083	321	43.45	13.70	1,572.31	8.95	375	43.14	12.91	1,862.43	9.44
085	748	41.03	13.47	1,707.37	0.98	811	41.01	13.16	1,776.09	1.00
088	460	42.52	14.38	1,520.03	2.35	490	42.36	13.59	1,574.73	2.44
091	607	39.99	13.65	1,627.45	4.28	631	40.02	13.40	1,733.38	4.45
100	503	42.53	13.48	1,534.47	5.77	423	42.96	13.96	1,584.04	6.20
103	335	43.38	14.03	1,603.26	1.26	323	43.86	14.70	1,616.27	1.31
104	4,151	42.20	13.40	1,570.48	1.81	4,030	42.45	13.69	1,561.34	1.80
105	2,885	40.89	12.20	1,626.11	2.66	2,693	40.99	12.20	1,613.26	2.79
110	533	44.58	15.21	1,686.54	7.49	555	44.39	14.95	1,776.19	7.91
112	310	41.37	11.63	1,740.29	2.06	289	41.36	11.72	1,745.97	2.14
124	359	41.72	13.47	1,668.92	1.93	323	42.45	14.26	1,726.03	1.93
137	347	44.19	14.24	1,567.64	8.51	329	44.65	14.66	1,685.66	9.46

Section 3: Supplementary Information as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund

# **EXHIBIT D - COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL (CONTINUED)**

		As of	December 31	, 2013			As of E	December 31	, 2014	
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31*	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31*
170	760	45.88	12.63	2,072.21	\$1.31	777	45.58	12.34	2,134.79	\$1.44
177	470	41.36	11.26	1,656.00	0.81	412	41.92	12.09	1,708.05	0.94
206	448	40.81	11.02	1,583.59	4.03	449	41.24	11.24	1,634.16	4.38
214	650	41.88	13.57	1,794.61	2.61	654	41.66	13.21	1,840.56	2.71
218	324	43.56	15.88	1,581.11	2.94	325	44.06	16.02	1,668.90	3.29
219	276	42.63	16.57	1,696.33	5.58	291	42.05	15.18	1,761.90	5.67
237**	117	53.94	23.22	692.40	2.76	-	-	-	-	-
256	35	49.31	9.00	1,989.20	1.00	35	51.10	10.14	1,973.77	1.07
263	290	40.10	13.20	1,722.33	5.07	297	40.74	13.69	1,768.26	5.65
265	1,090	43.84	16.88	1,551.66	0.90	1,125	44.22	17.22	1,559.60	1.02
268	366	43.92	16.73	1,564.42	4.17	365	44.80	17.26	1,611.77	4.49
270	162	42.13	12.78	1,750.36	5.01	162	42.43	13.47	1,905.08	5.41
273	151	42.73	13.89	1,473.75	2.93	166	41.64	13.00	1,473.75	3.07
292	439	44.69	14.94	1,878.10	1.17	391	45.14	15.82	1,859.45	1.11
312	846	40.72	13.45	1,763.84	0.23	805	40.75	13.73	1,783.46	0.25
359	447	42.47	13.40	1,567.29	2.03	382	42.88	14.08	1,562.46	3.52
399	342	40.53	7.02	1,717.37	6.13	318	41.68	7.56	1,795.18	6.53
435	164	42.11	14.74	1,649.62	5.36	165	41.88	14.56	1,784.16	5.42
441	164	44.32	15.83	1,763.93	4.82	170	44.67	15.76	1,851.19	5.22
450	129	49.07	15.35	2,329.87	2.14	128	46.76	13.93	2,361.33	2.15
464	138	53.46	23.75	1,841.75	0.89	128	54.35	24.86	1,815.63	0.88
480	433	47.02	18.03	2,173.45	2.24	451	45.83	16.76	2,178.51	2.33
555	152	46.46	11.46	1,896.54	0.79	158	45.30	10.99	1,825.38	0.79
565	1	58.67	34.75	1,960.00	5.41	1	59.67	35.75	1,956.00	5.79
997	26	51.25	11.27	1,817.62	5.41	27	48.49	10.02	1,850.33	5.61
Total	54,282	42.80	<u>14.21</u>	<u>1,663.13</u>	<u>\$4.35</u>	<u>54,319</u>	<u>42.91</u>	<u>14.24</u>	1,703.53	<u>\$4.64</u>

<sup>\*</sup>Does not reflect contribution rate increases scheduled to occur during subsequent Plan years \*\*Local 237 has been dissolved

Section 3: Supplementary Information as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 



# **EXHIBIT E - SUMMARY STATEMENT OF INCOME AND EXPENSES ON AN ACTUARIAL BASIS**

	Year Ended Dece	ember 31. 2013	Year Ended Dece	mber 31. 2014
Contribution income:		,		,
Employer contributions and withdrawal liability payments	\$406,169,752		\$406,915,882	
Liquidated damages	249,536		166,463	
Adjustment for withdrawal liability receivable	-17,040,809		7,442,292	
Less administrative expenses	<u>-13,026,743</u>		<u>-12,014,240</u>	
Net contribution income		\$376,351,736		\$402,510,397
Settlement and other income		356,755		426,275
Investment income:				
Expected investment income	\$275,953,963		\$293,646,757	
Adjustment toward market value	18,033,864		<u>-43,115,454</u>	
Net investment income		293,987,827		250,531,303
Total income available for benefits		\$670,696,318		\$653,467,975
Less benefit payments		-\$441,792,780		-\$454,020,194
Change in reserve for future benefits		\$228,903,538		\$199,447,781

## **EXHIBIT F - FINANCIAL INFORMATION TABLE**

	Year Ended Dec	ember 31, 2013	Year Ended Dec	ember 31, 2014
Cash equivalents		\$71,092,366		\$68,780,712
Accounts receivable:				
<ul> <li>Employer contributions</li> </ul>	\$42,244,754		\$40,151,788	
<ul> <li>Payment for security sold</li> </ul>	20,853,563		31,721,108	
<ul> <li>Accrued interest and dividend</li> </ul>	5,770,699		6,731,806	
<ul> <li>Miscellaneous</li> </ul>	<u>643,085</u>		<u>680,788</u>	
Total accounts receivable		69,512,101		79,285,490
Investments:				
<ul> <li>Corporate stocks</li> </ul>	\$1,650,875,783		\$1,431,195,272	
<ul> <li>Securities loaned to third parties</li> </ul>	585,758,767		584,145,072	
<ul> <li>Debt securities</li> </ul>	425,430,637		538,247,147	
<ul> <li>Common collective trusts</li> </ul>	557,265,081		565,114,476	
<ul> <li>Hedge funds</li> </ul>	313,156,038		408,195,305	
<ul> <li>Short-term investments</li> </ul>	84,118,729		225,881,474	
<ul> <li>Limited partnerships and other securities</li> </ul>	108,559,843		188,965,884	
<ul> <li>Real estate</li> </ul>	21,600,000		21,600,000	
Total investments at market value		3,746,764,878		3,963,344,630
Total assets		\$3,887,369,345		\$4,111,410,832
Less accounts payable:				
<ul> <li>Settlement for securities purchased</li> </ul>	-\$54,781,453		-\$99,098,625	
<ul> <li>Notes payable</li> </ul>	-7,403,951		-7,232,939	
<ul> <li>Miscellaneous</li> </ul>	-7,060,767		-5,845,721	
Total accounts payable		-\$69,246,171		-\$112,177,285
Net assets at market value*		\$3,818,123,174		\$3,999,233,547
Net assets at actuarial value*		\$3,940,831,853		\$4,140,279,634

<sup>\*</sup>Excludes withdrawal liability payments receivable of \$35,711,069 as of December 31, 2013 and \$28,268,777 as of December 31, 2014

EXHIBIT G - INVESTMENT RETURN - ACTUARIAL VALUE VS. MARKET VALUE

	Actuarial Investment			Market Value Investment Return		Actuarial \ Investment F		Market Value Investment Return	
Year Ended December 31	Amount	Percent	Amount	Percent	Year Ended December 31	Amount	Percent	Amount	Percent
1995	\$163,234,797	8.55%	\$334,727,761	20.69%	2005	\$249,128,731	8.50%	\$201,693,098	7.31%
1996	170,828,792	8.52%	229,161,544	12.12%	2006	153,183,390	5.01%	370,984,124	13.07%
1997	168,993,853	8.62%	283,878,769	14.49%	2007	235,073,194	7.57%	243,628,390	7.84%
1998	205,324,555	8.50%	314,421,636	13.04%	2008	-193,649,545	-5.93%	-905,604,097	-27.64%
1999	363,401,597	15.40%	190,707,659	7.52%	2009	463,585,989	15.45%	561,785,116	24.45%
2000	226,303,645	8.50%	3,560,195	0.13%	2010	209,948,846	6.25%	398,844,675	14.48%
2001	159,799,521	5.63%	-36,479,361	-1.39%	2011	122,036,155	3.52%	-52,598,539	-1.72%
2002	-154,706,918	-5.26%	-194,048,412	-7.69%	2012	243,627,164	6.95%	349,221,467	11.98%
2003	229,560,422	8.50%	458,228,754	20.44%	2013	293,987,827	7.99%	656,623,939	20.56%
2004	239,619,449	8.50%	298,949,842	11.55%	2014	250,531,303	6.40%	232,193,895	6.12%
					Total	\$3,799,812,767		\$3,939,880,455	
		Most recen	t three-year aver	age return:			7.11%		12.89%
		Most recen	t five-year avera	ge return:			6.25%		10.09%
		Most recen	t 10-year average	e return:			6.09%		6.86%
		20-year ave	erage return:				6.56%		7.43%

Note: Each year's yield is weighted by the average asset value in that year. The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value.

<sup>\*</sup> The actuarial value investment returns for 1999, 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

# **EXHIBIT H - ANNUAL FUNDING NOTICE FOR PLAN YEAR BEGINNING** JANUARY 1, 2015 AND ENDING DECEMBER 31, 2015

	2015 Plan Year	2014 Plan Year	2013 Plan Year
Actuarial valuation date	January 1, 2015	January 1, 2014	January 1, 2013
Funded percentage	59.3%	59.1%	57.4%
Value of assets*	\$4,140,279,634	\$3,940,831,853	\$3,711,928,315
Value of liabilities	6,987,384,126	6,671,514,903	6,463,106,428
Fair market value of assets as of plan year end*	Not available	3,999,233,547	3,818,123,174

<sup>\*</sup>Excludes withdrawal liability payments receivable

#### **Critical or Endangered Status**

The Plan is in endangered status for the 2015 Plan year because it is not in critical status and its funded percentage is less than 80%. In addition, the Plan is not projected to be in critical status for any of the five succeeding Plan years.

#### **EXHIBIT I - FUNDING STANDARD ACCOUNT**

- > ERISA imposes a minimum funding standard that requires the Plan to maintain a Funding Standard Account. The accumulation of contributions in excess of the minimum funding standard is called the Funding Standard Account credit balance. If actual contributions fall short on a cumulative basis, a funding deficiency has occurred.
- > The Funding Standard is charged with normal cost and the amortization of increases in the unfunded actuarial accrued liability due to plan amendments, experience losses, and changes in actuarial assumptions and funding methods. The Funding Standard Account is credited with employer contributions, withdrawal liability payments, and the amortization of decreases in the unfunded actuarial accrued liability due to plan amendments, experience gains, and changes in actuarial assumptions and funding methods.
- > Increases or decreases in the unfunded actuarial accrued liability are amortized over 15 years except that short-term benefits, such as 13<sup>th</sup> checks, are amortized over the scheduled payout period.
- > The Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010 (PRA 2010) allowed eligible plans such as this one to amortize certain losses over periods up to 29 years. Beginning in 2009, the Funding Standard Account reflects the Trustees' election under PRA 2010 to extend the amortization of the 2008 investment loss, smooth those losses over 10 years in the actuarial value of assets, and increase the upper limit on the actuarial value of assets.

# FUNDING STANDARD ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 2014 (RECOGNIZING FIVE-YEAR AMORTIZATION EXTENSION)

	Charges		Credits			
1	Prior year funding deficiency	\$0	6	Prior year credit balance	\$119,925,676	
2	Normal cost, including administrative expenses	96,701,186	7	Employer contributions	414,524,637	
3	Total amortization charges	554,633,316	8	Total amortization credits	296,358,967	
4	Interest to end of the year	48,850,088	9	Interest to end of the year	46,766,022	
5	Total charges	\$700,184,590	10	Full-funding limitation credit	<u>0</u>	
			11	Total credits	\$877,575,302	
			Cr	edit balance/(funding deficiency): 11 - 5	<u>\$177,390,712</u>	

- > PPA'06 requires the Internal Revenue Service (IRS) to permit multiemployer plans facing a funding deficiency within 10 years to extend the schedule for paying off their liabilities by five years. The Trustees elected to utilize this provision effective January 1, 2009.
- > The chart below shows the development of the Funding Standard Account without the five-year amortization extension.

# FUNDING STANDARD ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 2014 (DISREGARDING FIVE-YEAR AMORTIZATION EXTENSION)

	Charges	Credits			
1	Prior year funding deficiency	\$530,666,254	6	Prior year credit balance	\$0
2	Normal cost, including administrative expenses	96,701,186	7	Employer contributions	414,524,637
3	Total amortization charges	574,436,486	8	Total amortization credits	296,358,967
4	Interest to end of the year	90,135,294	9	Interest to end of the year	37,771,597
5	Total charges	\$1,291,939,220	10	Full-funding limitation credit	<u>0</u>
			11	Total credits	\$748,655,201
			Cr	edit balance/(funding deficiency): 11 - 5	<u>-\$543,284,019</u>

#### **EXHIBIT J - MAXIMUM DEDUCTIBLE CONTRIBUTION**

- > Employers that contribute to defined benefit pension plans are allowed a current deduction for payments to such plans. There are various measures of a plan's funded level that are considered in the development of the maximum deductible contribution amount.
- > One of the limits is the excess of 140% of "current liability" over assets. "Current liability" is one measure of the actuarial present value of all benefits earned by the participants as of the valuation date. This limit is significantly higher than the current contribution level.
- > Contributions in excess of the maximum deductible amount are not prohibited; only the deductibility of these contributions is subject to challenge and may have to be deferred to a later year. In addition, if contributions are not fully deductible, an excise tax in an amount equal to 10% of the non-deductible contributions may be imposed. However, the plan sponsor may elect to exempt the non-deductible amount up to the ERISA full-funding limitation from the excise tax.
- > The Trustees should review the interpretation and applicability of all laws and regulations concerning any issues as to the deductibility of contribution amounts with Fund Counsel.

1 Normal cost, including administrative expenses	\$167,259,204
2 Amortization of unfunded actuarial accrued liability	385,844,705
3 Preliminary maximum deductible contribution: 1 + 2, with interest to the end of the plan year	594,586,703
4 Full-funding limitation (FFL)	6,879,044,931
5 Preliminary maximum deductible contribution, adjusted for FFL: lesser of 3 and 4	594,586,703
6 Current liability, projected to the end of the plan year	12,031,999,187
7 Actuarial value of assets, projected to the end of the plan year	3,949,754,337
8 Excess of 140% of current liability over projected assets at end of plan year: [140% of (6)] - (7), not less than zero	12,895,044,525
9 End of year minimum funding standard	292,271,676
Maximum deductible contribution: greatest of 5, 8, and 9	\$12,895,044,525

#### **EXHIBIT K - PENSION PROTECTION ACT OF 2006**

#### PPA'06 Zone Status

- > Based on projections of the credit balance in the Funding Standard Account, the funded percentage, and cash flow sufficiency tests, plans are categorized in one of three "zones": critical status, endangered status, or neither.
- > The funded percentage is determined using the actuarial value of assets and the present value of benefits earned to date, based on the actuary's best estimate assumptions.

Critical Status (Red Zone) A plan is classified as first being in critical status (the Red Zone) if:

- The funded percentage is less than 65%, and either there is a projected Funding Standard Account deficiency within five years or the plan is projected to be unable to pay benefits within seven years, or
- There is a projected Funding Standard Account deficiency within four years, or
- There is a projected inability to pay benefits within five years, or
- The present value of vested benefits for inactive participants exceeds that for actives, contributions are less than the value of the current year's benefit accruals plus interest on existing unfunded accrued benefit liabilities, and there is a projected Funding Standard Account deficiency within five years, or
- As permitted by the Multiemployer Pension Reform Act of 2014, the plan is projected to be in the *Red Zone* within five years and the plan sponsor elects to be in critical status.

A critical status plan is further classified as being in critical and declining status if:

- The ratio of inactives to actives is at least 2 to 1, and there is an inability to pay benefits projected within 20 years, or
- The funded percentage is less than 80%, and there is an inability to pay benefits projected within 20 years, or
- There is an inability to pay benefits projected within 15 years.

Any amortization extensions are ignored for testing initial entry into the Red Zone but are used for determining emergence.

The Trustees are required to adopt a formal Rehabilitation Plan, designed to allow the plan to emerge from critical status by the end of the rehabilitation period. If they determine that such emergence is not reasonable, the Rehabilitation Plan must be designed to emerge as of a later time or to forestall possible insolvency.

Trustees of *Red Zone* plans have tools, such as the ability to reduce or eliminate early retirement subsidies, to remedy the situation. Accelerated forms of benefit payment (such as lump sums) are prohibited. However, unless the plan is critical and declining, Trustees may not reduce benefits of participants who retired before being notified of the plan's critical status (other than rolling back recent benefit increases) or alter core retirement benefits payable at normal retirement age.

## **EXHIBIT K - PENSION PROTECTION ACT OF 2006 (CONTINUED)**

#### Endangered Status (*Yellow Zone*)

A plan not in critical status (Red Zone) is classified as being in endangered status (the Yellow Zone) if:

- The funded percentage is less than 80%, or
- There is a projected Funding Standard Account deficiency within seven years.

A plan that has both of the endangered conditions present is classified as seriously endangered.

Trustees of a plan that was in the *Green Zone* in the prior year can elect not to enter the *Yellow Zone* in the current year (although otherwise required to do so) if the plan's current provisions would be sufficient (with no further action) to allow the plan to emerge from the *Yellow Zone* within 10 years.

The Trustees are required to adopt a formal Funding Improvement Plan, designed to improve the current funded percentage, and avoid a funding deficiency as of the emergence date.

Green Zone

A plan not in critical status (the Red Zone) nor in endangered status (the Yellow Zone) is classified as being in the Green Zone.

Early Election of Critical Status

Trustees of a *Green* or *Yellow Zone* plan that is projected to enter the *Red Zone* within five years must elect whether or not to enter the *Red Zone* for the current year.

#### **EXHIBIT L - SECTION 415 LIMITATIONS**

- > Section 415 of the IRC specifies in terms of pay or dollars the maximum benefit that may be paid to an individual from a defined benefit plan and the maximum amount that may be allocated each year to an individual's account in a defined contribution plan.
- > If an individual is covered only by multiemployer plans, the plans' benefits do not have to be combined. If the individual is covered by a multiemployer and a single-employer plan, the benefits from all plans maintained by the same employer are combined. Multiemployer plan benefits do not need to be combined with single-employer plan benefits in testing the pay-based limit but are combined for testing the dollar-based limit.
- > A qualified pension plan may not pay benefits in excess of the IRC Section 415 limits. Non-compliance can result in disqualification of the plan; the plan could lose its tax-exempt status, employers could lose their deductions and active participants could be taxed on their vested benefits.
- > Section 415(b) as amended by the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) limits the maximum annual benefit payable to a dollar limit of \$160,000 indexed for inflation. The dollar limit indexed for inflation has remained unchanged at \$210,000 for 2014 and 2015. The limits must be adjusted based on each participant's circumstances for such things as age at retirement and form of benefits chosen.
- > While the actual determination of the exact limits applicable to each participant's benefit can only be determined when the individual retires and applies for benefits, the overall impact of the Section 415 dollar limits has been reflected in this valuation for minimum and maximum funding purposes, based on our understanding of the requirements of IRC Sections 404, 412, 415, and 431 and the data available to us.
- > The Trustees should review the interpretation and applicability of the law and regulations in this area with Fund Counsel.

#### **SECTION 4: CERTIFICATE OF ACTUARIAL VALUATION**

# OCTOBER 2, 2015 CERTIFICATE OF ACTUARIAL VALUATION

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. ("Segal") has prepared an actuarial valuation of the Sheet Metal Workers' National Pension Fund as of January 1, 2015 in accordance with generally accepted actuarial principles and practices. It has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The valuation is based on the assumption that the Plan is qualified as a multiemployer plan for the year and on draft information supplied by the auditor with respect to contributions and assets and reliance on the Plan Administrator with respect to the participant data. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results. Adjustments for incomplete or apparently inconsistent data were made as described in the attached *Exhibit 7*.

I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate, except as noted in *Exhibit 1*. Each prescribed assumption for the determination of Current Liability was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

Daniel V. Ciner, MAAA

Senior Vice President and Actuary Enrolled Actuary No. 14-05773

### **EXHIBIT 1 - SUMMARY OF ACTUARIAL VALUATION RESULTS**

The valuation was made with respect to the following data supplied to us by the Plan Administrator:

Pensioners as of the valuation date (including 8,352 beneficiaries in pay status, 59 pensioners in suspended status, and 16 beneficiaries in suspended status)		46,501
Participants inactive during year ended December 31, 2014 with vested rights (including 86 beneficiaries with rights to deferred pensions and 38 participants with unknown age)		34,450
Participants active during the year ended December 31, 2014 (including 477 participants with unknown age)		54,319
Fully vested	43,050	
Not vested	11,269	
Total participants		135,270

The actuarial factors as of the valuation date are as follows:

Normal cost, including administrative expenses		\$167,259,204
Actuarial accrued liability		6,987,384,126
<ul> <li>Pensioners and beneficiaries<sup>1</sup></li> </ul>	\$4,003,649,767	
<ul> <li>Inactive participants with vested rights<sup>2</sup></li> </ul>	833,738,487	
Active participants	2,149,995,872	
Actuarial value of assets (\$3,999,233,547 <sup>3</sup> at market value as reported in a draft financial statement prepared by Calibre CPA Group)		\$4,140,279,634 <sup>3</sup>
Unfunded actuarial accrued liability		2,847,104,492

<sup>&</sup>lt;sup>1</sup>Includes liabilities for 1,009 alternate payees in pay status who are excluded from the above counts <sup>2</sup>Includes liabilities for 546 alternate payees with deferred benefits who are excluded from the above counts <sup>3</sup>Excludes receivable withdrawal liability payments of \$28,268,777

# **EXHIBIT 2 - INFORMATION ON PLAN STATUS AS OF JANUARY 1, 2015**

Plan status (as certified on March 31, 2015, for the 2015 zone certification)	Endangered
Actuarial value of assets for Funding Standard Account	\$4,140,279,634
Accrued liability under unit credit cost method	6,987,384,126
Funded percentage for monitoring plan's status	59.3%

## **EXHIBIT 3 - SCHEDULE OF ACTIVE PARTICIPANT DATA**

(SCHEDULE MB, LINE 8B)

The participant data is for the year ended December 31, 2014

	Pension Credits										
Age	Total	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	2,600	305	2,177	118	_	_	_	_	_	_	_
25 - 29	5,068	205	2,554	2,235	74	_	_	_	_	_	_
30 - 34	6,677	150	1,852	2,853	1,719	103	_	_	_	_	_
35 - 39	7,325	84	1,186	2,077	2,366	1,562	50	_	_	_	_
40 - 44	7,557	70	759	1,321	1,891	2,262	1,188	66	_	_	_
45 - 49	7,888	40	531	868	1,387	1,684	1,897	1,415	66	_	_
50 - 54	8,640	22	446	776	1,043	1,317	1,458	2,132	1,313	133	_
55 - 59	5,642	7	236	425	594	717	688	1,044	1,107	777	47
60 - 64	2,043	5	97	165	210	245	214	272	290	311	234
65 - 69	371	_	21	41	46	53	33	36	32	31	78
70 & over	31	_	4	4	1	7	1	3	4	1	6
Unknown	477	118	349	8	1	_	1	_	_	_	_
Total	54,319	1,006	10,212	10,891	9,332	7,950	5,530	4,968	2,812	1,253	365

Note: Excludes 2,162 employees with less than one year of vesting service

## **EXHIBIT 4 - FUNDING STANDARD ACCOUNT**

The table below presents the Funding Standard Account for the Plan Year ending December 31, 2015.

Charges			Credits		
1 Prior year funding deficiency	\$0	6	Prior year credit balance	\$177,390,712	
2 Normal cost, including administrative expenses	167,259,204	7	Amortization credits	296,358,967	
3 Amortization charges	578,371,103	8	Interest on 6 and 7	35,531,226	
4 Interest on 1, 2 and 3	55,922,273	9	Full-funding limitation credit	0	
5 Total charges	\$801,552,580	10	Total credits	\$509,280,905	
Minimum contribution with interest required to avoid a funding deficiency: 5 - 10, not less than zero					

## Full funding limitations (FFL) and credits:

ERISA FFL (accrued liability FFL)	\$3,582,760,532
RPA'94 override (90% current liability FFL)	6,879,044,931
FFL credit	0

# Schedule MB, line 8e

The difference between minimum funding standard for the year and the minimum that would have been required without extending the amortization bases is \$789,710,589.

# Schedule of Funding Standard Account Bases (Charges) (Schedule MB, Line 9c)

	Date	Amortization	Years	Outstanding
Type of Base	Established	Amount	Remaining	Balance
Initial Base*	01/01/1989	\$39,990,461	3	\$111,795,939
Plan Amendment*	01/01/1989	14,770,976	9	101,289,063
Prior Local 38 Combined Bases*	01/01/1990	447,017	1	447,017
Prior Local 137 Combined Bases*	01/01/1990	75,592	8	475,970
Prior Local 12 Combined Bases*	01/01/1990	1,227,045	3	3,430,285
Plan Amendment*	01/01/1990	4,751,277	10	35,059,133
Prior Local 51 Combined Bases*	01/01/1991	41,541	6	209,613
Prior Local 49 Combined Bases*	01/01/1991	286,737	1	286,737
Prior Local 17 Combined Bases*	01/01/1991	411,697	6	2,077,378
Plan Amendment*	01/01/1991	4,891,545	11	38,467,502
Plan Amendment*	01/01/1992	24,338,562	12	202,385,462
Plan Amendment*	01/01/1993	5,201,026	13	45,432,413
Plan Amendment*	01/01/1994	6,086,650	14	55,545,800
Plan Amendment*	01/01/1995	1,519,236	15	14,416,264
Actuarial Loss*	01/01/1996	17,855	1	17,855
Plan Amendment*	01/01/1996	6,412,433	16	63,015,749
Change in Assumptions*	01/01/1996	9,939,332	16	97,675,010
Plan Amendment*	01/01/1997	8,866,051	17	89,915,111
Actuarial Loss*	01/01/1998	5,040,097	3	14,089,919
Plan Amendment*	01/01/1998	2,160,881	18	22,546,550
Prior Local 38 Combined Bases*	01/01/1999	538,165	5	2,340,654

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

# Schedule of Funding Standard Account Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Plan Amendment*	01/01/1999	\$555,299	19	\$5,945,032
Actuarial Loss*	01/01/1999	5,275,115	4	18,993,186
Actuarial Loss*	01/01/2000	4,068,171	5	17,693,801
Plan Amendment*	01/01/2000	19,037,631	20	208,634,882
Plan Amendment*	01/01/2001	192,228	21	2,151,897
Actuarial Loss*	01/01/2001	5,338,829	6	26,939,119
Plan Amendment*	01/01/2002	10,255,333	22	117,049,040
Actuarial Loss*	01/01/2002	35,807,007	7	203,879,601
Plan Amendment*	01/01/2003	3,719,186	23	43,206,492
Actuarial Loss*	01/01/2003	60,459,485	8	380,689,276
Actuarial Loss*	01/01/2004	4,431,608	9	30,388,882
Plan Amendment*	01/01/2004	12,476,476	24	147,305,870
Actuarial Loss*	01/01/2005	7,680,389	10	56,672,726
Actuarial Loss*	01/01/2006	3,351,822	11	26,359,003
Actuarial Loss*	01/01/2006	3,205,525	26	38,937,341
Actuarial Loss*	01/01/2007	4,600,188	12	38,252,512
Plan Amendment*	01/01/2007	3,652,209	27	44,920,294
Change in Asset Method*	01/01/2007	10,417,797	7	59,317,336
Change in Assumptions*	01/01/2007	75,824,731	27	932,605,108
Actuarial Loss*	01/01/2008	4,486,880	13	39,194,144
Actuarial Loss*	01/01/2009	2,228,556	14	20,337,443

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

## Schedule of Funding Standard Account Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Extended Recognition of 2008 Investment Loss*	01/01/2009	\$53,243,117	24	\$628,624,939
Change in Assumptions	01/01/2011	15,855,237	11	124,686,864
Extended Recognition of 2008 Investment Loss	01/01/2011	25,516,211	23	296,426,694
Plan Amendment	01/01/2012	429,327	12	3,570,038
Extended Recognition of 2008 Investment Loss	01/01/2012	5,765,101	23	66,974,276
Actuarial Loss	01/01/2012	10,376,023	12	86,281,034
Plan Amendment	01/01/2013	486,781	13	4,252,168
Change in Assumptions	01/01/2013	4,648,382	13	40,604,910
Extended Recognition of 2008 Investment Loss	01/01/2013	6,588,832	23	76,543,725
Plan Amendment	01/01/2014	285,758	14	2,607,780
Extended Recognition of 2008 Investment Loss	01/01/2014	16,044,274	23	186,389,397
Plan Amendment	01/01/2015	360,874	15	3,424,388
Actuarial Loss	01/01/2015	7,597,483	15	72,093,687
Change in Assumptions	01/01/2015	17,095,062	15	162,217,674
Total		\$578,371,103		\$5,115,089,983

<sup>\*</sup>Denotes bases that were extended five years (not to exceed 30 years for the extended recognition of the 2008 investment loss) under IRC Section 431(d)(1)

# Schedule of Funding Standard Account Bases (Credits) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Change in Assumptions	01/01/1989	\$4,851,476	5	\$21,100,654
Prior Local 501 Combined Bases	01/01/1990	22,415	6	113,106
Change in Method	01/01/1991	40,286	4	145,049
Change in Assumptions	01/01/1992	11,419,593	7	65,021,410
Change in Method	01/01/1992	15,774,802	7	89,819,300
Plan Amendment	07/01/1994	13,462	15.5	130,055
Plan Amendment	01/01/1996	14,769,689	11	116,150,028
Plan Amendment	09/01/2003	21,285,336	18.67	225,996,734
Plan Amendment	01/01/2005	3,079,758	20	33,751,307
Change in Cost Method	01/01/2007	45,147,422	2	87,145,024
Plan Amendment	01/01/2008	2,607,010	8	16,415,303
Plan Amendment	03/01/2008	49,137,498	8.17	314,224,674
Plan Amendment	08/01/2008	27,770,774	8.58	184,029,631
Change in Asset Method (Funding Relief)	01/01/2009	18,467,502	24	218,040,053
Plan Amendment	01/01/2010	627,690	10	4,631,657
Actuarial Gain	01/01/2010	12,696,666	10	93,687,263
Extended Recognition of 2008 Investment Loss	01/01/2010	14,218,584	23	165,180,012
Plan Amendment	01/01/2011	1,357,810	11	10,677,927
Actuarial Gain	01/01/2011	30,219,651	11	237,649,779
Plan Amendment	01/01/2013	21,747	13	189,962
Actuarial Gain	01/01/2013	4,724,529	13	41,270,076

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

# Schedule of Funding Standard Account Bases (Credits) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Actuarial Gain	01/01/2014	\$18,105,267	14	\$165,225,775
Total		\$296,358,967		\$2,090,594,779

# **Equation of Balance**

1	Net outstanding balance of bases	\$3,024,495,204
2	Credit balance	177,390,712
3	Unfunded actuarial accrued liability: 1 - 2	\$2,847,104,492

# **EXHIBIT 5 - CURRENT LIABILITY**<sup>1</sup>

The table below presents the current liability for the Plan Year beginning January 1, 2015.

ltem	Amount
Retired participants and beneficiaries receiving payments	\$5,493,918,154
Inactive vested participants	1,746,399,039
Active participants	
Non-vested benefits	\$725,150,719
Vested benefits	<u>3,756,211,620</u>
Total active	\$4,481,362,339
Total	\$11,721,679,532
Expected increase in current liability due to benefits accruing during the plan year	\$363,252,211
Expected release from current liability for the plan year	468,884,733
Expected plan disbursements for the plan year, including administrative expenses of \$14,100,000	\$482,984,733
Current value of assets	\$3,999,233,547
Percentage funded for Schedule MB	34.1%

<sup>&</sup>lt;sup>1</sup> The actuarial assumptions used to calculate these values are shown in *Exhibit 7*.

# **EXHIBIT 6 - ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS**

The actuarial present value of accumulated plan benefits calculated in accordance with FAS ASC 960 is shown below as of January 1, 2014 and as of January 1, 2015. In addition, the factors that affected the change between the two dates follow.

	Benefit Information Date	
	January 1, 2014	January 1, 2015
Actuarial present value of vested accumulated plan benefits:		
Participants currently receiving payments	\$3,786,998,663	\$4,003,649,767
Other vested benefits	<u>2,535,693,210</u>	<u>2,640,847,873</u>
Total vested benefits	\$6,322,691,873	\$6,644,497,640
Actuarial present value of non-vested accumulated plan benefits	348,823,030	342,886,486
Total actuarial present value of accumulated plan benefits	\$6,671,514,903	\$6,987,384,126
Factors		Change in Actuarial Present Value of Accumulated Plan Benefits
Plan amendments		\$3,424,388
Benefits accumulated, net experience gain or loss, changes in data		120,909,495
Benefits paid		-454,020,194
Changes in actuarial assumptions		162,217,674
Interest		483,337,860
Total		\$315,869,223

#### **EXHIBIT 7 - STATEMENT OF ACTUARIAL ASSUMPTIONS/METHODS**

(SCHEDULE MB, LINE 6)

#### Rationale for Assumptions

Current data is reviewed in conjunction with each annual valuation. Based on professional judgment the following assumptions were changed:

- Mortality assumption for non-retired participants was changed to the RP-2014 Blue Collar Employee Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
- Mortality assumption for beneficiaries and non-disabled pensioners was changed to the RP-2014 Blue Collar Healthy Annuitant Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014;
- Mortality assumption for disabled pensioners was changed to the RP-2014 Disabled Retiree Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014; and
- > Annual administrative expense assumption was changed to \$14,100,000, payable monthly.

#### **Mortality Rates**

Healthy Employee: RP-2014 Blue Collar Employee Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014

Healthy Pensioner or Beneficiary: RP-2014 Blue Collar Healthy Annuitant Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014

Disabled: RP-2014 Disabled Retiree Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014

The mortality tables with ages set forward 1 year and projected with Scale MP-2014 from 2014 reasonably reflect the mortality experience of the Plan as of the measurement date. These mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

The mortality rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of deaths by age and liability change and the projected number and liability change based on the prior year's assumption over the most recent four years.

#### **Termination Rates** before Retirement

	Rate (%)				
	Mortality <sup>1</sup>		Withdrawal <sup>3</sup>		
Age	Male	Female	Disability <sup>2</sup>	Construction	Production
20	0.06	0.02	0.04	13.00	24.00
25	0.06	0.02	0.04	10.17	20.00
30	0.06	0.03	0.04	7.00	14.84
35	0.07	0.03	0.05	5.42	11.57
40	0.09	0.05	0.07	4.72	9.57
45	0.14	0.08	0.14	3.53	8.43
50	0.24	0.14	0.30	3.00	7.40
55	0.40	0.20	0.64	3.00	7.40
60	0.68	0.30	1.30	0.00	7.40

<sup>&</sup>lt;sup>1</sup>Mortality rates are projected on a generational basis using Scale MP-2014. Rates above are sample rates in 2014.

The termination rates and disability rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of terminations and disability retirements and the projected number based on the prior years' assumption over the most recent four years.

<sup>&</sup>lt;sup>2</sup>Participants are assumed to elect non-disability pensions upon eligibility.

<sup>&</sup>lt;sup>3</sup>Withdrawal rates do not apply at or beyond early retirement age.

#### **Retirement Rates -Active Participants**

	Annual Retirement Rates		
	Not Eligible for	Eligible for	
Age	55/30 (60/30) Pension	55/30 (60/30) Pension*	
55	5	25	
56-57	5	14	
58-59	7	14	
60-61	14	20	
62	35	40	
63-69	25	35	
70	100	100	

<sup>\*</sup>Rate at first eligibility for 55/30 (60/30, if applicable) Pension is 25% or above rate at applicable age, if higher

The retirement rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements by age and liability change and the projected number and liability change based on the prior years' assumption over the most recent four years.

#### **Description of Weighted Average Retirement Age**

Age 61, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the January 1, 2015 actuarial valuation.

#### Retirement Rates for Inactive Vested **Participants**

Age	Annual Retirement Rates*
55-61	5
62-63	10
64	30
65	35
66-79	20
80	100

\*20% of inactive participants are assumed to retire with a Special Early, or 55/30 Pension (60/30 if applicable) if expected to be eligible based on reported Funding Improvement Plan Option, and 80% are assumed to retire with a Normal or Standard Early Pension, depending upon age and service at retirement.

The retirement rates for inactive vested participants were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number retirements by age and the projected number based on the prior years' assumption over the most recent four years.

#### **Future Benefit Accruals**

For Construction employees: 1,650 hours per year

For Production employees: 1,700 hours per year

The Funding Improvement Plan Option covering each participant, based on the census data provided for this valuation. is assumed to remain unchanged.

The Applicable Percentage under the Plan's benefit formula is 1.25% for 2015 and 2016. For 2017 and beyond, the average expected Applicable Percentage is 0.83%.

The assumed hours used to calculate future benefit accruals were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the assumed and the actual benefit accruals over the most recent five years.

The average expected Applicable Percentage was determined by stochastically projecting the Plan's market investment returns after 2014. The stochastic projections were based on the long-term expected returns and volatility estimates as provided by Morgan Stanley's Global Investment Committee, as well as the Plan's target asset allocation.

#### **Unknown Data for Participants**

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 

Definition of Active Participants	Employees with at least 435 hours in the most recent plan year and who have accumulated at least one year of vesting service, excluding those who have retired as of the valuation date.
Percent Married	80%
Age and Sex of Spouse	Spouse of male participant is assumed to be three years younger than the participant and spouse of female participant is assumed to be three years older than the participant. If the spouse's sex is not provided, the spouse is assumed to be the opposite sex of the participant.
Benefit Election	Married participants are assumed to elect the 50% joint and survivor annuity (with the "pop-up" feature if available) and non-married participants are assumed to elect the single life annuity.
	The benefit elections were based on historical and current demographic data, adjusted to reflect the plan design, and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the assumed and the actual option election patterns over the most recent five years.
Eligibility for Delayed Retirement Factors	Inactive vested participants after attaining age 65, with increases up to age 80.
Net Investment Return	7.50%
	The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Segal Rogerscasey, and the long-term expected returns and volatility estimates as provided by Morgan Stanley's Global Investment Committee, as well as the Plan's target asset allocation.
Annual Administrative Expenses	\$14,100,000, payable monthly, for the year beginning January 1, 2015 (equivalent to \$13,561,264 payable at the beginning of the year)
	The annual administrative expenses were based on historical and current data, adjusted to reflect the budget for the upcoming year, estimated future experience, and professional judgment.
Actuarial Value of Assets	The market value of assets less unrecognized returns in prior years. Unrecognized return is equal to the difference between the actual market return and the projected market return, and is recognized 20% per year over a five-year period (10% per year over a 10-year period for the year ended December 31, 2008). The actuarial value is further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method	Unit Credit Actuarial Cost Method. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis.
Benefits Valued	Unless otherwise indicated, includes all benefits summarized in Exhibit 8.
Current Liability	Interest: 3.51%, within the permissible range prescribed under IRC Section 431(c)(6)(E)
Assumptions	Mortality: Mortality prescribed under IRS Regulations 1.431(c)(6)-1 and 1.430(h)(3)-1: RP-2000 tables projected forward to the valuation year plus seven years for annuitants and 15 years for nonannuitants

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National **Pension Fund** 



Justification for Change in Actuarial Assumptions (Schedule MB, line 11)	Based on past experience and future expectations, the following actuarial assumptions were changed as of January 1, 2015 for funding purposes, and as applicable, December 31, 2014 for withdrawal liability purposes:	
	Mortality for non-disabled participants (before and after retirement), previously RP-2000 Combined Healthy Blue Collar Mortality Table projected from 2000 using Scale AA on a generational basis	
	Mortality for disabled lives, previously RP-2000 Combined Healthy Blue Collar Mortality Table for males, with participants under age 60 set forward to age 65 and participants over age 60 set forward 5 years	
	> Annual administrative expenses, previously \$12,400,000, payable at the beginning of the year	
Estimated Rate of Investment Return	On actuarial value of assets (Schedule MB, line 6g): 6.4%, for the Plan Year ending December 31, 2014	
	On current (market) value of assets (Schedule MB, line 6h): 6.1%, for the Plan Year ending December 31, 2014	
Funding Standard Account Contribution Timing (Schedule MB, line 3a)	Unless otherwise noted, contributions are paid periodically throughout the year pursuant to collective bargaining agreements. The interest credited in the Funding Standard Account is therefore assumed to be equivalent to a July 1 contribution date.	

# **EXHIBIT 8 - SUMMARY OF PLAN PROVISIONS**

(SCHEDULE MB, LINE 6)

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year	January 1 through December 31
Pension Credit Year	January 1 through December 31
Plan Status	Ongoing plan
Normal Potiroment	Age Dequirement CE

#### Normal Retirement

- Age Requirement: 65
- Service Requirement: Five years of participation in the Plan
- Amount: Described below

#### For service on and after January 1, 2014:

Participant's Benefit Rate multiplied by the participant's Contribution Hours for the Plan Year multiplied by the Applicable Percentage for the Plan Year.

Benefit Rate is the portion of the participant's contribution rate that is subject to benefit accruals. For Participants working under a Collective Bargaining Agreement that qualifies for a 55/30 (or 60/30) Pension, the Benefit Rate is the total Contribution Rate less the 55/30 (or 60/30) Rate (30% of the Contribution Rate for periods after December 1, 2007).

Contribution Hours are the hours for which contributions are required to be made for the participant's work in Covered Employment.

Applicable Percentage is based on the average of the Plan's rate of market value investment return for each of the three most recent Plan Years reported in the Actuarial Valuation and Review as of January 1 of the immediately preceding Plan Year and is defined in the following table:

Applicable Percentage	Average of Market Value Investment Return Percentages for 3 Most Recent Plan Years
1.25%	10.0% or higher
1.00%	8.5% or higher but less than 10.0%
0.75%	6.5% or higher but less than 8.5%
0.50%	Greater than 0% but less than 6.5%
0.00%	0% or less

The above formula applies unless otherwise stated in a Funding Improvement Plan Option.

The Applicable Percentage for the 2015 Plan Year is 1.25%.

## For service and on and after adoption of Rehabilitation Plan Schedule and before January 1, 2014:

Default Schedule/Persons for Whom Contribution were Not Required to be Made ("Persons for Whom"): 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

First Alternative Schedule: Same as accrual for service on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule.

Second Alternative Schedule: 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

Formerly Alternative Schedule and Agreement Did Not Include Required Contribution Rate Increases -No Increase Consequences ("NIC"): 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

## For service on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule:

Employers that have not made required contribution rate increases: Same as accrual for service after August 31, 2003.

Employers that have made required contribution rate increases: 1.5% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year (up to 1,200 hours), plus 0.7% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,200 hours). The 1.5% multiplier is applied to the first 1,200 hours at the highest Benefit Rate in effect during the Plan Year.

#### For service after August 31, 2003 and before December 1, 2007:

0.8571% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (up to 1,400 hours), plus 0.3% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,400 hours). For participants in 55/30 Locals, 80% of the total contribution rate is subject to benefit accruals. The 0.8571% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year.

#### Supplemental accruals:

Locals are required to increase their contribution rates subject to benefit accruals by 10% annually for eligibility. Participants of Locals that make the required increases earn a supplemental accrual that brings the total accrual to twice the normal rate in the year following the increase.

## For service after December 31, 1999 and before September 1, 2003:

1.7142% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (up to 1,400 hours), plus 0.6% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,400 hours). The 1.7142% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year.

### For service before January 1, 2000:

Benefit accrued according to the rules of the Plan in effect on December 31, 1999

#### Past Service:

\$10.00 for each year of Past Service Credit, if any, up to 10 years

• Post-Normal Retirement Age Adjustment: Regular pension accrued at Normal Retirement Age (NRA), increased by 1.0% for each month greater than NRA, and 1.5% for each month greater than age 70.

# Standard Early Retirement

- Age Requirement: 55
- Service Requirement: Fulfill any one of the following:
  - a. 10 years of Pension Credits, including at least five years of Future Service Credit, or
  - b. 10 years of Vesting Service, or
  - c. 15 years of Pension Credits, including at least 12 months of Future Service Credit
- Amount: Normal Retirement benefit reduced as described below.

## For benefits accrued on and after January 1, 2014:

Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option Actuarially from age 65 (Unsubsidized Early Retirement Pension)

First Alternative Option 6% per year from age 65



Second Alternative Option Actuarially from age 65 (Unsubsidized Early Retirement Pension)

#### For benefits accrued before January 1, 2014:

Reductions based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/

Persons for Whom Actuarially from age 65 (Unsubsidized Early Retirement Pension)

First Alternative Schedule 6% per year from age 65

Second Alternative Schedule Actuarially from age 65 (Unsubsidized Early Retirement Pension)

NIC Actuarially from age 65 (Unsubsidized Early Retirement Pension)

#### Special Early Retirement

Age Requirement: 55

Service Requirement: Fulfill any one of the following:

a. 10 years of Pension Credits, including at least five years of Future Service Credit, or

b. 10 years of Vesting Service, or

c. 15 years of Pension Credits, including at least 12 months of Future Service Credit

 Active Service Requirement: Complete at least 3,500 hours of work in covered employment during the five consecutive calendar years immediately preceding retirement

Amount: Normal Retirement benefit reduced as described below.

## For benefits accrued on and after January 1, 2014:

Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option Unavailable

First Alternative Option 6% per year from age 62

Unavailable Second Alternative Option

## For benefits accrued before January 1, 2014:

Reductions based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/

Unavailable Persons for Whom

First Alternative Schedule 6% per year from age 62

Second Alternative Schedule Unavailable NIC Unavailable

## Age 62 Pension

- Age Requirement: 62
- Service Requirement: Same as Special Early Retirement
- Active Service Requirement: Same as Special Early Retirement
- Amount: Described below

#### For benefits accrued on and after January 1, 2014:

Amount based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option Unavailable First Alternative Option Unavailable

Second Alternative Option Normal Retirement Benefit amount

#### For benefits accrued before January 1, 2014:

Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/

Persons for Whom Unavailable Unavailable First Alternative Schedule

Second Alternative Schedule Normal Retirement Benefit amount NIC Normal Retirement Benefit amount

#### 55/30 Pension

- Age Requirement: 55
- Service Requirement: 30 years of Future Service Credit with at least 60 months of the last 120 months of Future Service Credit subject to a 55/30 Rate
- Active Service Requirement: Complete at least 3,500 hours of work in covered employment at 55/30 Rate during the five consecutive calendar years immediately preceding retirement
- Amount: Described below

## For benefits accrued on and after January 1, 2014:

Amount based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option Unavailable First Alternative Option Normal Retirement benefit amount

Second Alternative Option Unavailable

#### For benefits accrued before January 1, 2014:

Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/

Persons for Whom Unavailable

First Alternative Schedule Normal Retirement Benefit amount

Second Alternative Schedule Unavailable NIC Unavailable

#### 60/30 Pension

- Age Requirement: 55
- Service Requirement: Same as 55/30 Pension
- Active Service Requirement: Same as 55/30 Pension
- Amount: Described below

#### For benefits accrued on and after January 1, 2014:

Amount based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option Unavailable
First Alternative Option Unavailable

Second Alternative Option Normal Retirement benefit amount

## For benefits accrued before January 1, 2014:

Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/

Persons for Whom Unavailable First Alternative Schedule Unavailable

Second Alternative Schedule Normal Retirement benefit amount

NIC Unavailable

**Full Disability** 

Age Requirement: Under age 55



- Service Requirement: 10 years of Credited Service, including at least five years of Future Service Credit
- Active Service Requirement: Worked at least 435 hours in the 24-month period immediately preceding the date of disablement
- Other Requirement: Approved for disability benefit with the Social Security Administration or Railroad Retirement Board
- Amount: Early Retirement benefit amount, payable beginning in the seventh month of disability
- Charge for Coverage: None

The Disability Benefit is not payable for participants categorized as Persons for Whom when the Plan was in critical status unless all eligibility conditions had been satisfied before January 1, 2010.

#### Vesting

- Age Requirement: None
- · Service Requirement: Five years of Vesting Service
- Amount: Normal Retirement benefit amount, based on plan in effect when last active
- Normal Retirement Age: 65

#### Spouse's Pre-Retirement Death Benefit

- Eligibility Requirement: Has attained Vested Status
- Amount: 50% of the monthly benefit the participant would have received had he/she terminated employment on his/her date of death and survived to his/her Early Retirement Date (or any later date elected by the spouse), retired and elected to receive benefits in the Normal Form of payment.
- When Paid: Immediately if participant's death occurred after attainment of his/her earliest retirement age, otherwise month in which the participant would have attained his/her earliest retirement age. If surviving spouse elects to receive payments before the month in which participant would have attained his/her earliest retirement age, the monthly benefit will be the actuarial equivalent of the amount described above.

### Pre-Retirement Lumpsum Death Benefit

- Eligibility: Date of death after December 31, 2007; has attained Vested Status; no portion of the benefit assigned to an Alternative Payee under a QDRO; and worked at least 435 hours within 24-month period preceding death
- Amount: \$5,000

# Post-Retirement Death Benefit

50% Joint and Survivor: If married, pension benefits are paid in the form of a 50% joint and survivor annuity unless the participant and spouse reject this form. If not rejected, the benefit amount otherwise payable is reduced to reflect the joint and survivor coverage. If not rejected, the spouse predeceases the employee, and the employee retired on March 1, 1999 or later, the employee's benefit amount will subsequently be increased to the unreduced amount payable ("pop-up" feature) had the joint and survivor coverage been rejected. If rejected, or if not married, benefits are payable for the life of the employee, or in any other available optional form elected by the employee in an actuarially equivalent amount.

Section 4: Certificate of Actuarial Valuation as of January 1, 2015 for the Sheet Metal Workers' National Pension Fund



The "pop-up" feature is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.

60-Month Certain: If the member has completed at least 15 years of Pension Credits before retirement and died within 5 years after retirement (if married, and taking joint and survivor pension, the spouse also died prior to receiving an amount equal to 60 times the amount of the pension the participant had been entitled), the pension benefit will continue to be paid to the participant's designated beneficiary until a total of 60 months payments had been made.

The 60-month certain is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.

#### **Forms of Payment**

The normal forms of payment are:

- Single life annuity for single participants, and
- > 50% joint and survivor annuity with a "pop-up" feature for married participants (if applicable)

The available optional forms of payment are:

- Single life annuity with 60-month certain (if applicable)
- > 50% joint and survivor annuity with a "pop-up" feature and 60-month certain (if applicable)
- > 75% joint and survivor annuity with a "pop-up" feature (if applicable)
- > 100% joint and survivor annuity with and without a "pop-up" feature (if applicable)

The "pop-up" feature and 60-month certain are only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. They are only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.

#### **Participation**

After completion of 870 hours during a calendar year

participant's	nted on the basis of days worked or amount earned in covered employment in calendar years prior to a s Contribution Date. For employers with a Contribution Date on or after January 1, 2000, the employer's bution rate must be at least \$0.50 per hour.
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**Future Service Credit** 

Service granted on the basis of hours of work in a calendar year after a Participant's Contribution Date in accordance with the following schedule:

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015.		
First Alternative Option: 7.0% for 2015 - 2017 Plan Years		

# **Cost of Living Adjustment (COLA)**

- Eligibility: Pensioners and beneficiaries whose benefits are based on contribution rates that were increased by the Required Pension Fund Increase and who separated and retired from Covered Employment on or after January 1. 1991 and before December 1, 2001. No payment is made after January 1, 2008 unless the annual supplement had been in effect 60 months before that date (i.e., the benefit must have been payable on the participant's Allocation Date for 2002 - October 31, 2002).
- Amount: An annual supplement equal to 2% of the participant's total monthly payments for the 12 months immediately preceding the Allocation Date, multiplied by the number of whole years preceding the Allocation Date that the participant or beneficiary has received benefits, up to a maximum of 15 years. If the participant had elected a level income option, the 2% factor is applied to the benefit prior to the adjustment for the form of payment.

Effective July 1, 1995, no NPF COLA Benefit is payable with respect to any benefits accrued after June 30, 1995.

A participant who was retired and received an annual supplemental increase under the NPF COLA Benefit for the 2002 Allocation Date will continue to receive the benefit, but it will not exceed the supplement that was paid for the 2002 Allocation Date (i.e., it remains fixed at that amount)

#### **Changes in Plan Provisions**

Contribution rates increased in accordance with the Funding Improvement Plan. Since benefit accruals are tied directly to contribution rates, the contribution rate increases are treated as a Plan change.

The average contribution rate increased from \$4.35 per hour as of January 1, 2014 to \$4.64 per hour as of January 1, 2015. The average rate for 2015, including reported bargained increases, is \$4.69 per hour.

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