Segal Consulting

Sheet Metal Workers' National Pension Fund

Withdrawal Liability Valuation as of December 31, 2017

This report has been prepared at the request of the Board of Trustees for the purposes of establishing the basis for withdrawal liability assessments during the January 1, 2018 through December 31, 2018 period. This 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 report may not be applicable for other purposes.

Segal Consulting
101 NORTH WACKER DRIVE, SUITE 500 CHICAGO, IL 60606
T 312.984.8500 WWW.SEGALCO.COM

October 12, 2018

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

Dear Trustees:

This report summarizes and reviews the Plan's status and experience with respect to employer withdrawal liability. It outlines the withdrawal liability method adopted and explains the calculation of the amount of liability of a withdrawn employer. It also establishes the basis for assessments of withdrawal liability for withdrawal during the period January 1, 2018 through December 31, 2018.

The actuarial calculations were completed under the supervision of Daniel V. Ciner, MAAA, Enrolled Actuary. The basic participant and financial data used in this report are the same as those used in the actuarial valuation as of January 1, 2018. The benefit provisions included in the calculations are those that were in effect on December 31, 2017. The method described in the PBGC Technical Update 10-3 has been used to account for reductions in benefits that occurred as a result of implementation of the Rehabilitation Plan when the Plan was in critical (Red Zone) status.

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, Inc.

By:

David A. Dean, MAAA, EA
Senior Vice President

Daniel V. Ciner, MAAA, EA
Senior Vice President and Actuary

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Sheet Metal Workers' National Pension Fund Withdrawal Liability Valuation as of December 31, 2017

Section 1: Actuarial Valuation Summary

Important Information about Withdrawal Liability Valuations

A withdrawal liability valuation is prepared to assist in the determination and assessment of withdrawal liability. It is a forecast of future uncertain obligations of a pension plan. As such, the forecast will never precisely match the actual stream of benefits and expenses to be paid. In order to prepare withdrawal liability valuations, 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. 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. For an employer withdrawing in a particular plan year, the relevant plan provisions are those in effect at the end of the prior plan year.
- **Participant Information** The present value of vested benefits, upon which withdrawal liability for an employer is determined, 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. It is not necessary to have perfect data for a valuation: the valuation is an estimated forecast, not a prediction. 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** The withdrawal liability valuation is based on the asset values as of the valuation date, typically reported by the auditor. The allocation of the unfunded present value of vested benefits to an employer is based on its detailed obligated contribution information as well as that for other participating employers, as provided by the plan.
- **Actuarial Assumptions** In measuring the present value of vested benefits for withdrawal liability purposes, Segal starts by developing a forecast of the vested 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 and retirement. The forecasted benefits are then discounted to a present value. The actuarial model used to develop the present value of vested benefits for withdrawal liability purposes may use approximations and estimates that will have an immaterial impact on our results. 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 withdrawal liability valuation report (or other actuarial calculations) needs to keep the following in mind:

- The withdrawal liability valuation report is prepared for use by the Trustees. It includes information relative to the provisions of ERISA pertaining to withdrawal liability. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- A withdrawal liability valuation is a measurement as of a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of other potential financial measurements.
- Actuarial results in this report are not rounded, but that does not imply precision.
- Segal does not provide investment, legal, accounting, or tax advice. This withdrawal liability valuation report is based on Segal's understanding of applicable guidance in these areas and of the plan's provisions. The Trustees should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, a withdrawal liability valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's results, Segal may revise that valuation report or make an appropriate adjustment in the next valuation.
- Segal's withdrawal liability 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.

Significant Issues in Valuation Year

- The unfunded vested liability as of December 31, 2017 is $4.9 billion (without regard to Affected Benefits pools), as compared to $5.1 billion last year. The decrease in the unfunded vested liability since last year was primarily due to the greater than expected market value return and the increase in the PBGC interest rates. In addition, a reallocated pool of $10,648,767 was established for withdrawn employers.
- The market value investment return for the year ended December 31, 2017 was 14.1%.
- The unamortized balance of the Affected Benefits pools, representing the value of benefit reductions under the Rehabilitation Plan when the Plan was in critical (Red Zone) status, is $436 million.
- Interest rates used to determine the funded portion of the present value of vested benefits changed from 1.98% for 20 years and 2.67% thereafter to 2.34% for 20 years and 2.63% thereafter (PBGC interest rates).
- Since benefit accruals are tied to contribution rates, increases in contributions rates increased liabilities.

Summary of Key Results

	2016	2017
Demographic Data:		
• Number of pensioners and beneficiaries[1]	47,652	47,843
• Number of inactive vested participants[2]	33,149	33,089
• Number of active vested participants	43,586	43,925
Interest Assumptions:		
• Valuation (funding) interest rate	7.50%	7.50%
• PBGC interest rates	1.98% for 20 years, 2.67% thereafter	2.34% for 20 years, 2.68% thereafter
Present Value of Vested Benefits[3]:		
• Present value of vested benefits at funding interest rate	$7,132,351,580	$7,366,779,367
• Present value of vested benefits at PBGC rates, including allowance for expenses	15,155,303,043	14,916,155,634
• Present value of vested benefits for withdrawal liability purposes	9,424,758,615	9,898,116,905
Unfunded Vested Liability[3]:		
• Market value of assets	$4,330,341,953	$5,001,449,568
• Unfunded vested liability for withdrawal liability purposes (excluding Affected Benefits pools)	5,094,416,662	4,896,667,337
• Unamortized balance of Affected Benefits pools	490,025,467	436,321,371
Withdrawal Liability Pools Established		
• Basic pool	$636,645,316	$232,705,600
• Reallocated pool	734,153	10,648,767

1 Excludes alternate payees in pay status (1,121 for 2016 and 1,161 for 2017)
2 Excludes alternate payees with deferred benefits (533 for 2016 and 557 for 2017)
3 Includes liabilities for alternate payees

Section 2: Actuarial Valuation Results

A. Determination of Withdrawal Liability

The Multiemployer Pension Plan Amendments Act of 1980 (MPPAA) requires assessment of withdrawal liability on an employer that withdraws from the Plan. In general, "withdrawal" means the employer has permanently ceased operations under the Plan or has permanently ceased to have an obligation to contribute to the Plan.

An employer in the construction industry is considered to have withdrawn from the Plan only if it continues (or within five years resumes) the same type of work in the jurisdiction of the labor contract.

Determination of Unfunded Vested Liability

The amount of withdrawal liability is based on the Plan's unfunded vested liability at the time of withdrawal. The "unfunded vested liability" refers to the value of vested benefits not covered by assets.

For withdrawal liability purposes, "vested benefits" are the benefits that are considered non-forfeitable if the participant incurs a permanent break in service. The value of these benefits is based on the Plan provisions as of the same date.

Determinations of the value of the liability for vested benefits are based on a set of actuarial assumptions. The law prescribes that the assumptions and methods used must be reasonable in the aggregate and "offer the actuary's best estimate of anticipated experience under the plan." It also authorizes the PBGC to promulgate assumptions and methods for use by the Plan's actuary. However, the PBGC has not yet promulgated any assumptions or methods.

The actuarial assumptions and methods are reasonable (taking into account the experience of the Plan and reasonable expectations) and, in combination, represent the actuary's best estimate of anticipated experience under the Plan to determine the unfunded vested benefits for withdrawal liability purposes.

The interest rate is based on a blend, which includes rates selected based on estimated annuity purchase rates for benefits being settled, because withdrawal liability is a final settlement of an employer's obligations to the Plan. For benefits that could be settled immediately, because assets on hand are sufficient, the annuity purchase rates are those promulgated by PBGC under ERISA Sec. 4044 for multiemployer plans terminating by mass withdrawal on the measurement date. For benefits that cannot be settled immediately because they are not currently funded, the calculation uses rates equal to the interest rate used for plan funding calculations.

Allocation

The Plan's method of allocation is fully described in *Section 3, Exhibit A*. Briefly, the method involves prorating the unfunded vested liability as of December 31, 1979 plus (or minus) a proration of changes in that figure in each subsequent year before withdrawal. The original unfunded vested liability and each year's change are subject to 5% annual write-downs. This method is known as the "presumptive method" and is the method adopted by the Trustees.

The Trustees have adopted one modification to this method. In any year following a merger, the pools are restarted. Therefore, after the merger of Local 38 effective January 1, 1999, all liability pools established in 1998 or earlier were eliminated. The presumptive method was then reinitiated with a single liability pool set up for 1999 (i.e., the initial pool).

Another amount is added to the total amount to be allocated for possible withdrawal liability, namely, the amounts not collected because of bankruptcy, deductibles subtracted from amounts actually assessed, or other limitations on withdrawal assessments specified by law. These uncollected or nonassessable amounts are reallocated among the employer accounts and are also subject to 5% annual write-downs.

Also, a pool is added to the total amount representing the present value of vested benefits that were eliminated during a year due to implementation of the Rehabilitation Plan when the Plan was in critical (Red Zone) status. This pool, called the Affected Benefits pool, is amortized over 15 years at the interest rate used for plan funding.

The PBGC has affirmed that a multiemployer plan may assess withdrawal liability to employers that withdraw even if the plan currently has no unfunded vested liability.

De minimis

Each withdrawal liability assessment is the total of the unamortized balances of the allocation amounts, as defined above, less a *de minimis* deductible. The deductible is $50,000 but not more than ¾% of the Plan's unfunded vested liability. This deductible amount is reduced, dollar for dollar, by the amount by which the total of charges prorated to the employer exceeds $100,000.

Payment of Withdrawal Liability

The total amount of an employer's withdrawal liability is not ordinarily payable in a lump sum. The law sets forth a basis for calculating annual amounts, to be paid in quarterly installments unless the plan has fixed some other schedule, and there is a 20-year payment maximum. The payment schedule adopted by the Trustees is more fully detailed in *Section 3, Exhibit A.*

Under certain circumstances, as allowed by ERISA, the Trustees may require immediate payment of withdrawal liability assessments.

B. Unfunded Vested Liability

The determination of the unfunded vested liability is based on the actuarial assumptions and methods and plan of benefits described in *Section 4* of this report.

Changes Since Prior Year

The following plan and assumption changes were made since last year's determination:

- PBGC interest rates changed from 1.98% for 20 years and 2.67% thereafter to 2.34% for 20 years and 2.68% thereafter.
- Since benefit accruals are tied to contribution rates, increases in contributions rates increased liabilities.

Basic Pools

The Plan's unfunded vested liability for withdrawal liability purposes for each year since 1999 is detailed in the chart on the following page.

The chargeable change amount is determined as the unfunded vested liability for a given year less the greater of the sum of the previous unamortized balances or zero. The unamortized balance of each chargeable change is equal to the initial amount with a 5% write-down each year since the establishment of said amount.

BASIC POOLS AS OF DECEMBER 31, 2017

Plan Year Ended December 31	Unfunded Vested Liability	Chargeable Change	Unamortized Balance of Chargeable Change
1999	$736,261,358	$736,261,358	$73,626,136
2000	965,681,744	266,233,454	39,935,018
2001	1,672,005,971	756,448,968	151,289,794
2002	2,279,737,125	695,678,342	173,919,586
2003	2,295,768,754	138,762,735	41,628,821
2004	2,556,022,442	389,922,930	136,473,026
2005	2,626,361,805	219,504,752	87,801,901
2006	3,125,995,466	659,774,289	296,898,430
2007	3,283,243,150	350,377,024	175,188,512
2008	2,905,946,043	(166,648,911)	(91,656,901)
2009	3,213,007,196	509,376,896	305,626,138
2010	3,541,489,308	556,266,708	361,573,360
2011	3,875,896,499	590,005,117	413,003,582
2012	4,275,068,600	684,270,284	513,202,713
2013	4,115,908,264	160,151,360	128,121,088
2014	4,407,461,882	618,872,884	526,041,951
2015	4,856,394,008	807,195,035	726,475,532
2016	5,094,416,662	636,645,316	604,813,050
2017	4,896,667,337	232,705,600	232,705,600
Total			**$4,896,667,337**

Reallocated Amounts

Withdrawing employers are charged with prorated shares of the "nonassessable" or "uncollectible" liabilities that are reallocated. Reallocation is more fully described in *Section 3, Exhibit A.*

Each annual reallocated amount is written down by 5% of the original amount for each full year from the date that it was originally determined to the end of the plan year preceding withdrawal.

During the 2017 plan year, there was $309,570 that was non-assessable as a result of de minimis amounts. Additionally, there were $10,339,197 in withdrawal liability payments that were deemed non-collectible. As a result, a reallocated pool equal of $10,648,767 was established as of December 31, 2017, as shown in the chart on the following page.

REALLOCATED POOLS AS OF DECEMBER 31, 2017

Plan Year Ended December 31	Initial Value	Unamortized Balance
2000	$2,829,190	$424,379
2001	1,466,151	293,230
2002	754,760	188,690
2003	1,694,632	508,390
2004	4,470,812	1,564,784
2005	584,963	233,985
2006	1,768,092	795,641
2007	2,740,446	1,370,223
2008	842,692	463,481
2009	5,087,176	3,052,306
2010	9,185,020	5,970,263
2011	6,839,258	4,787,481
2012	8,571,492	6,428,619
2013	6,629,378	5,303,502
2014	13,269,251	11,278,863
2015	8,756,994	7,881,295
2016	734,153	697,445
2017	10,648,767	10,648,767
Total		**$61,891,344**

Affected Benefits Pools

The Affected Benefits pools (as described in PBGC Technical Update 10-3) represent the present value of vested benefits that were eliminated each year due to implementation of the Rehabilitation Plan when the Plan was in critical (Red Zone) status. These pools are amortized over 15 years at the interest rate used for plan funding for the Plan year for which the pool was established.

No Affected Benefits pools are established for years that the Plan was not certified to be in critical status.

AFFECTED BENEFITS POOLS AS OF DECEMBER 31, 2017

Plan Year Ended December 31	Initial Value	Unamortized Balance
2008	$715,689,683	$380,570,056
2009	97,042	58,229
2010	71,615,261	47,520,860
2011	9,317,175	6,733,024
2012	165,983	129,070
2013	1,580,864	1,310,132
2014	0	0
2015	0	0
2016	0	0
2017	0	0
Total		**$436,321,371**

Section 3: Supplementary Information

EXHIBIT A - METHOD FOR ALLOCATING WITHDRAWAL LIABILITY

The Plan determines the liability of an employer that has completely withdrawn on the basis of the statutory presumptive method defined in Section 4211(b) of ERISA, modified to restart the pools following a year in which there is a merger. This occurred most recently after Local 38 merged into the Plan effective January 1, 1999.

The liability of an employer for complete withdrawal from the Plan is determined as the sum of the unamortized balances, as of the end of the Plan Year preceding withdrawal, of the employer's prorated shares of each of the following:

- the Plan's unfunded vested liability as of December 31, 1999;
- the change in the Plan's unfunded vested liability as of the end of each subsequent Plan year (to the end of the Plan year preceding withdrawal); and
- reallocated amounts that would have been payable to the Plan as withdrawal liability payments for withdrawals in preceding years, except that they were nonassessable under certain statutory provisions or not collectible; and
- amounts representing the present value of vested benefits eliminated due to implementation of the Rehabilitation Plan (Affected Benefits).

Unamortized Balances

The "unamortized balance" of the first three of these sources of liability assessment is determined by reducing each figure by 5% of its original amount for each full year from the end of the Plan Year as of which the charge was originally determined to the end of the Plan Year immediately preceding withdrawal. The Affected Benefits pools are amortized over 15 years at the interest rate used for plan funding for the Plan Year for which the pool was established.

Initial Amount

The Plan's unfunded vested liability as of December 31, 1999 was determined by subtracting the market value of Plan assets from the value of vested benefits under the Plan.

Annual Changes

The change in the Plan's unfunded vested liability as of the end of any Plan year is generally determined as follows:

- by establishing the Plan's unfunded vested liability as of the end of that Plan year, and
- by subtracting the total, not less than zero, of (a) the unamortized balance of the unfunded vested liability as of December 31, 1999 and (b) the unamortized balances of each previous annual change after December 31, 1999.

A "positive" change represents an unfunded vested liability greater than the total of the unamortized balances and is an addition to potential liability assessments for future withdrawals. A "negative" change represents an unfunded vested liability lower than the total of unamortized balances and is a credit against amounts that would otherwise determine potential liability assessments for future withdrawals.

Reallocated Amounts

The total amount, if any, of unfunded vested liability determined in any Plan year after December 31, 1999 to be nonassessable or uncollectible with respect to employers that withdrew is established as an amount to be prorated among each of the participating employers as an additional withdrawal liability amount. Nonassessable amounts consist of amounts deducted under the *de minimis* rule (ERISA Section 4209), amounts not payable because of the 20-year limit (ERISA Section 4219(c)(1)), and amounts not payable because of the limitations in the event of sale of all of the employer's assets (ERISA Section 4225). Uncollectible amounts consist of amounts that the Trustees have determined are uncollectible for reasons arising out of cases under federal bankruptcy law or similar proceedings. They also include any other amount of assessed liability determined by the Plan's Trustees to be uncollectible.

Each annual amount of reallocable nonassessables and uncollectibles is written down by 5% of the original amount for each full year from the date as of which it was originally determined to the end of the Plan year preceding withdrawal.

Affected Benefits

A pool is added to the total amount representing the value of vested benefits that were eliminated during the year due to implementation of the Rehabilitation Plan when the Plan was in critical (Red Zone) status. This pool, called the Affected Benefits pool, is amortized over 15 years at the interest rate used for plan funding for the Plan year for which the pool is established.

Proration to the Employer

For determining the amount of its liability in the event of its complete withdrawal, the initial amount of unfunded vested liability, each annual change in the unfunded vested liability and, each annual reallocable amount of nonassessable and uncollectible amounts is prorated to an employer on the basis of a ratio of contributions. The ratio is the employer's obligated contributions to the Plan to total employer contributions made to the Plan during an "apportionment base period," consisting of the 5 years ending with the end of the Plan year as of which each of the amounts was determined.

The total of employer contributions with respect to an apportionment base period is reduced by any contributions otherwise included in the total that were made by a significant employer that withdrew from the Plan in or before the Plan Year in which the pool arose. MPRA provides that contribution increases that go into effect after December 31, 2014 pursuant to a Funding Improvement Plan or a Rehabilitation Plan are also disregarded in determining the allocation of unfunded vested liability, unless the additional contributions are used to provide an increase in benefits.

Payment of Withdrawal Liability

A withdrawn employer's withdrawal liability assessment is payable in quarterly installments. The quarterly installment is calculated as one-fourth of the product of:

- The average base units in the three consecutive years that produce the highest average within the 10-year period ending before the plan year of withdrawal, and
- the highest contribution rate in the 10-year period ending with the plan year of withdrawal.

Per MPRA, increases in the contribution rate required under a Funding Improvement or a Rehabilitation Plan that go into effect after December 31, 2014 are excluded from the determination of the highest rate in the 10-year period described above, unless the additional contributions are used to provide an increase in benefits.

The number of quarterly installments is calculated on the basis of the amount of withdrawal liability and interest at the actuarial valuation rate used for funding purposes. Payments are limited to a maximum of 20 years.

Maintenance of Allocations

Even if no employer withdrawal had occurred, the method requires determination annually of the value of the Plan’s unfunded vested liability, any reallocable uncollectible withdrawal liability amounts and remaining balances of the Affected Benefits pools. It is also necessary for the Plan to be in a position to allocate liability to any particular employer based on its contribution history. These procedures and records are necessary in order to be able to determine an assessment should withdrawal occur and also to respond, as required by law, to an inquiry from a participating employer as to the amount of its potential liability.

Partial Withdrawal

The withdrawal may also be partial. A “partial withdrawal” occurs if there is a 70% decline in the number of contribution base units or there is a partial cessation of the employer’s obligation to contribute. A 70% decline occurs if the contribution base units in the Plan Year and the preceding two Plan Years (the testing period) are less than 30% of contribution base units for the high base year. The “high base year” is the average of the base units in the two Plan Years in which the base units were the highest within the five Plan Years preceding the testing period. A partial withdrawal may also occur if an employer ceases to have an obligation to contribute under one or more, but not all of its collective bargaining agreements, and continues work in the jurisdiction, or if the employer permanently ceases to be obligated to contribute for work performed at one or more, but not all, of the facilities covered but continues the work at that facility.

For a construction-industry plan, a partial withdrawal occurs only if the employer is obligated to contribute to the plan for only an insubstantial portion of its continuing work of the type covered by the plan within the jurisdiction of the labor agreement.

Under a partial withdrawal, the amount of liability is equal to the amount of withdrawal liability for a complete withdrawal (net of any deductible), multiplied by a fraction, which is one minus a ratio. The ratio is that of the employer’s contribution base units in the Plan Year following the year of the partial withdrawal to the employer's average contribution base units in the five Plan Years preceding the year of the partial withdrawal.

Plan Reentry

PBGC has issued regulations describing the procedure to be followed in the event an employer reenters the Plan after incurring withdrawal liability. Withdrawal liability will be abated if the post-reentry level of contribution base units exceed 30% of the average of the contribution base units in the two Plan Years in which the base units were the highest within the five Plan Years preceding the Plan Year of withdrawal.

Withdrawal liability payments due after plan reentry are abated, provided the employer posts a bond or escrow account equal to 70% of the withdrawal liability payments otherwise due. In the event of a withdrawal following reentry, the withdrawal liability is adjusted to reflect prior withdrawal liability payments.

EXHIBIT B - EMPLOYER WITHDRAWAL LIABILITY WORKSHEET FOR WITHDRAWALS FROM JANUARY 1, 2018 THROUGH DECEMBER 31, 2018

Employer Name:	Unamortized Balance of Withdrawal Liability Pools			Contributions During 5-Year Period Ending With Date Pool Established		Liability Allocated:
Year Ended December 31[1]	Basic Pools[2]	Reallocated Pools[3]	Affected Benefits Pools[4]	Total Plan Contributions[5]	Obligated Employer Contributions[6]	[(6) ÷ (5)] x [(2) + (3) + (4)]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1999	$73,626,136	$0	$0	$978,758,381	$	$
2000	39,935,018	424,379	0	1,049,198,648		
2001	151,289,794	293,230	0	1,108,035,485		
2002	173,919,586	188,690	0	1,156,086,641		
2003	41,628,821	508,390	0	1,180,264,191		
2004	136,473,026	1,564,784	0	1,193,749,349		
2005	87,801,901	233,985	0	1,210,189,788		
2006	296,898,430	795,641	0	1,275,299,752		
2007	175,188,512	1,370,223	0	1,367,978,490		
2008	(91,656,901)	463,481	380,570,056	1,498,738,835		
2009	305,626,138	3,052,306	58,229	1,579,997,694		
2010	361,573,360	5,970,263	47,520,860	1,618,194,282		
2011	413,003,582	4,787,481	6,733,024	1,654,151,482		
2012	513,202,713	6,428,619	129,070	1,689,780,634		
2013	128,121,088	5,303,502	1,310,132	1,706,299,106		
2014	526,041,951	11,278,863	0	1,791,923,116		
2015	726,475,532	7,881,295	0	1,947,039,073		
2016	604,813,050	697,445	0	2,112,433,865		
2017	232,705,600	10,648,767	0	2,284,129,430		
A. Gross liability: (Sum of Column 7)						$
B. *De minimis*						50,000
C. Deductible: $100,000 + (B) – (A), but not greater than (B) nor less than zero						
D. Allocable Unfunded Vested Liability[7]: (A) – (C), not less than zero						$

1 Years not shown have no withdrawal liability component.
2 Original value of changes in unfunded vested liability, written down 5% per year.
3 Original value of nonassessable and uncollectible withdrawal liability, written down 5% per year.
4 Original value of Plan's vested benefits eliminated each year due to the Rehabilitation Plan when the Plan was in critical (Red Zone) status, amortized over 15 years at the interest rate used for plan funding for the Plan Year for which the pool was established.
5 Total Fund contributions for the Plan year listed and the four preceding years, excluding contributions from withdrawn employers who withdrew on or before the date the pool was established and disregarding certain contribution rate increases per MPRA, if applicable.
6 Obligated employer contributions for the Plan year listed and the four preceding years, including contributions owed but not yet paid and disregarding certain contribution rate increases per MPRA, if applicable.
7 Does not reflect impact of partial withdrawal, limitation on annual payments or sale of assets.

Section 4: Actuarial Certification

OCTOBER 12, 2018

ACTUARIAL CERTIFICATION OF WITHDRAWAL LIABILITY

This is to certify that Segal Consulting, a Member of The Segal Group, Inc., has prepared an Actuarial Valuation to calculate the pools used to assess withdrawal liability to employers who withdraw during the year beginning January 1, 2018. The calculations were performed in accordance with generally accepted actuarial principles and practices. 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 valuation was based on draft information supplied by the auditor with respect to contributions and assets and by the Plan Administrator with respect to the data required on participants. We have not verified and customarily would not verify such information, but we have no reason to doubt its substantial accuracy.

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 I*, and in my opinion the assumptions used, in the aggregate, (a) are reasonable (taking into account the experience of the Plan and reasonable expectations) and (b) represent my best estimate of anticipated experience under the Plan.

Daniel V. Ciner, MAAA
Senior Vice President and Actuary
Enrolled Actuary No. 17-05773

EXHIBIT 1 - CALCULATION OF UNFUNDED VESTED LIABILITY

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

Pensioners as of the valuation date (including 8,847 beneficiaries in pay status and 47 pensioners in suspended status)	47,843
Participants inactive during year ended December 31, 2017 with vested rights (including 105 beneficiaries with rights to deferred pensions and 36 participants with unknown age)	33,089
Participants active with vested rights (including 34 participants with unknown age)	43,925
Total vested participants	**124,857**

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

Present value of vested benefits at funding interest rate[1]	$7,366,779,367
Present value of vested benefits at PBGC interest rates, including allowance for expenses[1]	14,916,155,634
Market value of assets	5,001,449,568
Ratio funded at PBGC interest rates	0.335304
Present value of vested benefits for withdrawal liability purposes	$9,898,116,905
Unfunded vested liability (excluding Affected Benefits pools)	4,896,667,337
Unamortized balance of Affected Benefits pools	$436,321,371

[1] Includes liabilities for 1,161 alternate payees in pay status and 557 alternate payees with deferred benefits who are excluded from the above counts

EXHIBIT 2 - WITHDRAWAL LIABILITY POOLS

Pool Established December 31	Original Amount			Pool Balance on December 31, 2017[1]		
	Basic Pool	Reallocated Pool	Affected Benefits Pool	Basic Pool	Reallocated Pool	Affected Benefits Pool
1999	$736,261,358	$0	$0	$73,626,136	$0	$0
2000	266,233,454	$2,829,190	0	39,935,018	$424,379	0
2001	756,448,968	1,466,151	0	151,289,794	293,230	0
2002	695,678,342	754,760	0	173,919,586	188,690	0
2003	138,762,735	1,694,632	0	41,628,821	508,390	0
2004	389,922,930	4,470,812	0	136,473,026	1,564,784	0
2005	219,504,752	584,963	0	87,801,901	233,985	0
2006	659,774,289	1,768,092	0	296,898,430	795,641	0
2007	350,377,024	2,740,446	0	175,188,512	1,370,223	0
2008	(166,648,911)	842,692	715,689,683	(91,656,901)	463,481	380,570,056
2009	509,376,896	5,087,176	97,042	305,626,138	3,052,306	58,229
2010	556,266,708	9,185,020	71,615,261	361,573,360	5,970,263	47,520,860
2011	590,005,117	6,839,258	9,317,175	413,003,582	4,787,481	6,733,024
2012	684,270,284	8,571,492	165,983	513,202,713	6,428,619	129,070
2013	160,151,360	6,629,378	1,580,864	128,121,088	5,303,502	1,310,132
2014	618,872,884	13,269,251	0	526,041,951	11,278,863	0
2015	807,195,035	8,756,994	0	726,475,532	7,881,295	0
2016	636,645,316	734,153	0	604,813,050	697,445	0
2017	232,705,600	10,648,767	0	232,705,600	10,648,767	0

[1] Basic and reallocated pools are written down annually at the rate of 5% of the original amount. The Affected Benefits pools are amortized over 15 years at the interest rate used for plan funding for the year for which the pool was established.

EXHIBIT 3 – ACTUARIAL ASSUMPTIONS AND METHODS

Investment Return	To the extent the vested benefits are matched by the market value of plan assets on hand: interest assumptions prescribed by the Pension Benefit Guaranty Corporation under 29 C.F.R. Ch. XL, Part 4044, which are in effect for the applicable withdrawal liability valuation date, are used. PBGC Interest Rates as of December 31, 2017: – First 20 years 2.34% – After 20 years 2.63% To the extent the vested benefits are not matched by plan assets (at market), the interest assumption is the same as used for plan funding: 7.50% The portion of the vested benefits that is matched by readily available assets is determined by comparing the total present value of vested benefits plus expenses – at PBGC rates – with the total market value of assets; each vested benefit is treated as covered by assets to the same extent as all other vested benefits. Affected Benefits liabilities are valued at the same interest rate assumption used for plan funding for the Plan year for which the pool is established. The discount rate is based on a blend, which includes rates selected based on estimated annuity purchase rates for benefits being settled, because withdrawal liability is a final settlement of an employer's obligations to the Plan. For benefits that could be settled immediately, because assets on hand are sufficient, the annuity purchase rates are those promulgated by PBGC under ERISA Sec. 4044 for multiemployer plans terminating by mass withdrawal on the measurement date. For benefits that cannot be settled immediately because they are not currently funded, the calculation uses rates equal to the discount rate used for plan funding calculations.
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 three years.

Retirement Rates for Active Participants

Age	Annual Retirement Rates	
	Not Eligible for 55/30 (60/30) Pension	Not Eligible for 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

* 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 five years.

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 five years.

Unknown Data for Participants	Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.
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.
Annual Administrative Expenses	$10,000, plus $200 per vested participant, plus a percentage (defined by statute) of the excess of the value of plan benefits over $200,000, and is applicable to the portion of benefits that is matched by assets.
Actuarial Value of Assets	At market value
Allocation Method	Presumptive, with fresh start in the year following a merger (most recently in 1999)
Contribution period for prorating liabilities	5 years; Contribution rate increases under the Funding Improvement Plan after December 31, 2014 are recognized if they result in increases in benefits.
***De minimis* Deductible**	$50,000, or 3/4 of 1% of the unfunded vested liability, if smaller. The deductible is reduced, dollar for dollar, if the gross assessment is in excess of $100,000

Free Look	An employer that would otherwise incur a complete withdrawal or a partial withdrawal will not be deemed to have withdrawn, despite the cessation of its obligation to contribute to the Plan, if all of the following conditions are met: • The employer first had an obligation to contribute to the Plan on or after January 1, 2015, but before January 1, 2018. • The employer had an obligation to contribute to the Plan for no more than 48 consecutive calendar months, starting with the first month for which the employer is obligated to contribute to the Plan. • The employer was obligated to make Plan contributions for each year through the date of withdrawal in an amount that was less than 2% of the sum of all employer contributions made to the Plan for each of such years. • The employer has never before avoided full or partial withdrawal liability from the Plan under the Free Look provision. • Any past service credit otherwise grantable to participants (other than current pensioners) for employment with the employer is cancelled. • The ratio of the Fund's assets to benefit payments made during the year preceding the first plan year for which the employer was required to contribute to the Plan was at least 8-to-1.

EXHIBIT 4 – SUMMARY OF PLAN PROVISIONS

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
Regular Pension	• *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 2017 Plan Year was 1.00%.

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. <u>Supplemental accruals</u>: 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) Note: The above applies to participants with an effective date of pension on or after February 1, 2014. Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.
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:* Board may require evidence of continued entitlement to Social Security Disability Benefits 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 *Second Alternative Option* Unavailable **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* Unavailable *First Alternative Schedule* 6% per year from age 62 *Second Alternative Schedule* Unavailable *NIC* Unavailable Note: The above applies to participants with an effective date of pension on or after February 1, 2014. Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.
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
	First Alternative Schedule	Unavailable
	Second Alternative Schedule	Normal Retirement Benefit amount
	NIC	Normal Retirement Benefit amount

Note: The above applies to participants with an effective date of pension on or after February 1, 2014. Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.

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

Note: The above applies to participants with an effective date of pension on or after February 1, 2014. Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.

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

Note: The above applies to participants with an effective date of pension on or after February 1, 2014. Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.

- Charge for Coverage: None

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.
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. 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
Past Service Credit	Service granted on the basis of days worked or amount earned in covered employment in calendar years prior to a participant’s Contribution Date. For employers with a Contribution Date on or after January 1, 2000, the employer’s initial contribution rate must be at least $0.50 per hour.

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:

Months of Future Service Credit	Hours of Work in Covered Employment During Calendar Year
0	Less than 100
1	100 - 199
2	200 - 299
3	300 - 399
4	400 - 499
5	500 - 599
6	600 - 699
7	700 - 799
8	800 - 899
9	900 - 999
10	1,000 - 1,099
11	1,100 - 1,199
12	1,200 & Over

Pension Credit	Sum of the Past Service Credit and Future Service Credit (excluding service lost under the Plan's break in service rules)
Vesting Service	870 or more hours of work within a Plan year earns one year of Vesting Service
Contribution Rate	Varies from $0.05 to $21.62 per hour as of the valuation date. The average rate is $5.37 per hour as of January 1, 2018. 2.5% of employer contributions are allocated to 401(h) Medical Accounts but are subject to pension benefit accruals.
Required Contribution Increases	Contribution rate increases required under the Funding Improvement Plan Options are described below. *First Alternative Option:* 7.0% for 2017 Plan Year *Second Alternative Option:* 3.5% for 2017 Plan Year

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)

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