



Estimate of EEOICPA Liabilities

Liability Estimate as of September 30, 2018

Report prepared for:

U.S. Department of Labor

Office of Workers' Compensation Programs

Report Date: September 14, 2018



September 14, 2018

Mr. Hari Kadavath
Director/Comptroller, Division of Financial Administration
Office of Workers' Compensation Programs
US Department of Labor
Frances Perkins Building
200 Constitution Ave NW
Washington DC 20210

Re: Estimate of EEOICPA Liabilities as of September 30, 2018

Dear Mr. Kadavath:

Attached is the actuarial report documenting our analysis of the EEOICPA liabilities as of September 30, 2018. If there are any questions regarding this report or the analysis which it documents, I can be reached by telephone at (651) 293-8008 or by email at chris.gross@cgconsult.com.

Sincerely,

Chris Gross, ACAS, MAAA
President and CEO

Jennifer Nelson
Senior Vice President

CG/jn

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Introduction

The Energy Employees Occupational Illness Compensation Program Act (“EEOICPA”) provides compensation and medical benefits to claimants who are (or were) employed in various energy-related activities either directly for the Department of Energy (“DOE”) or through its contractors or subcontractors. Eligible claimants also include survivors of deceased workers who otherwise would have been eligible for benefit payments.

The Office of Workers’ Compensation Programs (“OWCP”) at the U.S. Department of Labor maintains a model to estimate the future liabilities of the EEOICPA program. The OWCP has requested that Gross Consulting perform the annual data updates to the model, review the reasonableness of the EEOICPA model, and make enhancements as needed.

With the guidance of OWCP staff, we have updated the EEOICPA liability model for fiscal year 2018. We have made several adjustments to the model assumptions and believe that the updated assumptions contained in the model are reasonable, and that the calculations performed in the model are mathematically correct.

Distribution and Use

The valuation has been conducted in accordance with all relevant Actuarial Standards of Practice. The purpose of the actuarial valuation report is to estimate the Energy Employees’ Occupational Illness Compensation Program (“EEOICP”) actuarial liability and the change in the actuarial liability, and to assess the reasonableness of the related assumptions; to assist the U.S. Department of Labor in preparing the consolidated financial statements, as of and for the fiscal year ended September 30, 2018, in accordance with U.S. generally accepted accounting principles, as promulgated by the Federal Accounting Standards Advisory Board. We understand a copy of this report may be provided to OWCP’s auditors. If this report is shared, we request that the report be shared in its entirety.

Qualification

I, Chris Gross, am a member in good standing of the Casualty Actuarial Society and the American Academy of Actuaries and am qualified to provide this analysis.



Chris Gross, ACAS, MAAA

Executive Summary

Part B of EEOICPA, effective July 31, 2001 provides lump sum compensation of \$150,000 and medical expenses to employees of the Department of Energy (“DOE”), or its contractors or subcontractors, who develop cancer, beryllium disease, or chronic silicosis after working at a covered facility. If the employee is no longer living, compensation benefits are available to survivors. Part B also covers employees who are a member of the Special Exposure Cohort (“SEC”). A worker who is included in a designated SEC class of employees, and who is diagnosed with one of 22 specified cancers, may receive a presumption of causation under the EEOICPA. The National Institute for Occupational Safety and Health (“NIOSH”) has responsibility for designating additional facilities to the SEC.

Part E of the Act, effective October 28, 2004, provides wage loss, impairment benefit, and medical expenses to employees of the DOE and its contractors and subcontractors, who develop an illness due to exposure to toxic substances at certain DOE worksites. Part E also pays survivor benefits to certain survivors. Part E pays a maximum compensation amount of \$250,000 per case.

As of 9/30/2018, the discounted liability estimate for future EEOICPA benefit payments is \$24.0 billion. The future medical payments are projected at \$17.6 billion, and the future compensation payments are projected at \$6.4 billion, on a discounted basis. The discount rates used were 2.531% for compensation and 2.875% for medical.

ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2018

SUMMARY OF LIABILITY FOR FUTURE PAYMENTS (\$ Millions)

	Discounted Estimate as of 9/30/2018
Compensation: Part B	\$ 2,557
Compensation: Part E	\$ 3,836
Compensation: Total	\$ 6,393
Medical Payments	17,632
Total Future Payments	\$ 24,024

1- The discount rates used for the 9/30/2018 estimates were 2.531% for compensation and 2.875% for medical.

Discounted Cash Flow by Year

The following exhibits document the estimated cash flows by year, on a discounted basis. For informational purposes, the cash flows for the Department of Justice Part B RECA payments are displayed in column 4. The RECA compensation liability is included as part of Part B compensation liability in the Executive Summary.

ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2018

SUMMARY OF DISCOUNTED PAYMENTS BY YEAR

Fiscal Year	Compensation Part B Discounted Payments	Compensation Part E Discounted Payments	Compensation DOJ RECA Discounted Payments	Compensation Total Discounted Payments	Medical Total Discounted Payments	Total Discounted Payments
(1)	(2)	(3)	(4)	(4)	(5)	(6)
2019	\$ 245,769,370	\$ 338,535,865	\$ 10,719,655	\$ 595,024,890	\$ 788,176,472	\$ 1,383,201,362
2020	222,183,268	311,277,333	8,681,789	542,142,390	807,004,285	1,349,146,675
2021	200,928,407	286,060,172	7,031,333	494,019,912	804,833,696	1,298,853,607
2022	181,763,019	263,580,888	5,694,637	451,038,543	795,720,414	1,246,758,958
2023	164,472,317	242,718,743	4,612,055	411,803,115	779,870,692	1,191,673,807
2024	148,865,171	223,471,785	3,735,278	376,072,234	769,391,632	1,145,463,866
2025	134,771,243	205,057,063	3,025,180	342,853,487	754,289,021	1,097,142,507
2026	122,038,506	188,337,481	2,450,077	312,826,064	735,290,449	1,048,116,513
2027	110,531,099	174,527,371	1,984,304	287,042,774	713,109,458	1,000,152,232
2028	100,127,459	161,906,663	1,607,076	263,641,198	688,435,776	952,076,974
2029	90,718,692	149,548,815	1,301,562	241,569,070	661,912,037	903,481,107
2030	82,207,151	136,515,497	1,054,128	219,776,776	634,106,221	853,882,998
2031	74,505,191	122,772,576	853,732	198,131,500	605,508,396	803,639,896
2032	67,534,072	109,897,662	691,433	178,123,167	576,533,484	754,656,651
2033	61,222,998	98,653,502	559,988	160,436,487	547,524,809	707,961,297
2034	55,508,268	88,843,534	453,531	144,805,333	518,758,070	663,563,403
2035	50,332,526	80,123,391	367,312	130,823,230	490,451,590	621,274,820
2036	45,644,094	72,377,146	297,484	118,318,724	462,779,771	581,098,495
2037	41,396,384	65,286,271	240,931	106,923,585	435,883,813	542,807,399
2038	37,547,374	58,694,192	195,128	96,436,695	409,877,855	506,314,549
2039	34,059,143	53,037,425	158,033	87,254,602	384,852,400	472,107,002
2040	30,897,455	48,065,230	127,990	79,090,675	360,876,465	439,967,140
2041	27,932,515	43,523,914	103,659	71,560,088	337,996,998	409,557,086
2042	25,349,068	39,240,786	83,953	64,673,806	316,245,405	380,919,211
2043	23,005,788	35,337,738	67,993	58,411,520	295,638,719	354,050,239
After 2043 ¹	121,295,933	238,344,324	165,039	359,805,296	2,956,789,906	3,316,595,202
Total Future	\$2,500,606,512	\$ 3,835,735,369	\$ 56,263,280	\$ 6,392,605,161	\$17,631,857,834	\$24,024,462,996

¹ Reflects projected cash flow through FY 2078

Summary of Changes

Based on observed trends in the recent EEOICPA data, the following changes in assumptions were made to the model this year:

1. Part B

- Increase in the percentage of newly-approved claims filed by an employee (and therefore eligible for medical expenses) for Beryllium Disease, Cancer SEC and Cancer Non-SEC.
- The curves for estimating the number of future case approvals are now based more on recent history than on the longer-term history. For Cancer SEC cases, a specific curve is fit to the Cancer SEC data, rather than assuming that Cancer SEC and Cancer Non-SEC approvals will have the same decay rate.

2. Part E

- Increase in the projected number of future approvals for new Part E cases
- Increase in the percentage of newly-approved claims filed by an employee (and therefore eligible for medical expenses)
- Updates to the average payment amount per case and the timing of these payments

3. Medical Inflation Rates

The estimated medical inflation rates for future years 1-5 were updated based on guidance from OWCP management regarding expected cost increases in the short term. The long-term inflation rates selected are the CPI-Medical inflation rates the OMB Economic Assumptions for the 2019 Mid-Session Review.

4. Formula Updates

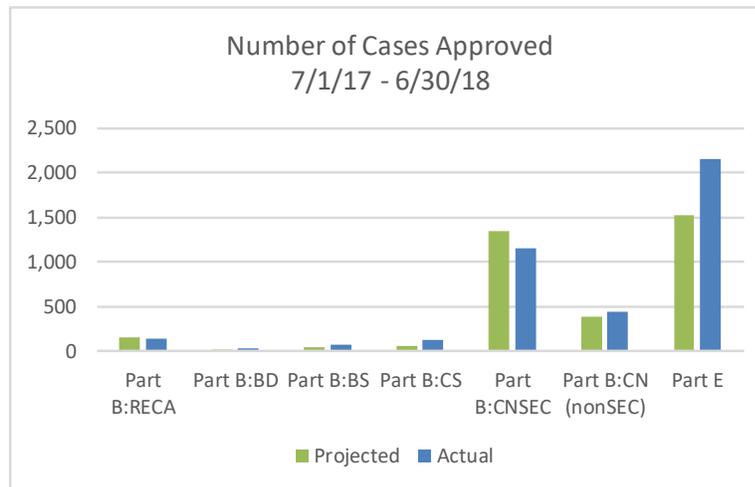
The EEOICPA model was updated this year to show the history and the projections on the same tab. Also, in response to NFR 17-14, the model automation was completed, so that formula changes related to the liability estimate are not required for the standard annual data refresh process. There was no numerical impact from the formula updates.

Please see Appendix 2 for a listing of the specific values for all assumptions.

Actual vs Projected

Number of Cases Approved

Overall, there were 17% more cases newly approved during 7/1/17 to 6/30/18 than what was projected. The projected number of future new Part E approvals has been increased to more closely align with recent approval rates.



Total Approved 7/1/17 to 6/30/18

	<u>Projected</u>	<u>Actual</u>	<u>Diff</u>	<u>%Diff</u>
Part B:RECA	154	141	(13)	-9%
Part B:BD	22	37	15	68%
Part B:BS	48	70	22	47%
Part B:CS	57	132	75	130%
Part B:CNSEC	1,348	1,152	(196)	-15%
Part B:CN (nonSEC)	386	442	56	15%
Part E	1,524	2,156	632	41%
Part B	2,014	1,974	(40)	-2%
Part E	1,524	2,156	632	41%
Total	3,539	4,130	591	17%

Cash Flow

The projected range for cash flow from 7/1/2017 to 6/30/2018² was \$1.200 billion - 1.267 billion. The actual cash flow during this period was \$1.320 billion, or 4.2% above the range.

The main drivers of the variance were higher-than-projected medical costs and an increased number of new cases approved during FY 2018.

Payments 7/1/17 to 6/30/18

	<u>Projected</u>	<u>Actual</u>	<u>Difference</u>	<u>%Diff</u>
Compensation Part B Non-DOJ RECA	\$281,405,785	\$267,554,960	(\$13,850,824)	-5%
Compensation Part B DOJ RECA	14,553,358	12,913,810	(1,639,548)	-11%
Compensation Part E	<u>296,656,113</u>	<u>336,042,988</u>	<u>39,386,875</u>	<u>13%</u>
Compensation Payments Total	592,615,255	616,511,758	23,896,503	4%
Medical Payments	<u>644,169,586</u>	<u>703,004,458</u>	<u>58,834,873</u>	<u>9%</u>
Total	1,236,784,841	1,319,516,216	82,731,376	7%

	<u>Projected</u>	<u>Actual</u>	<u>Difference in Payments</u>
New cases approved	3,539	4,130	27,762,871
Average medical expense for FY 2018	\$36,244	\$39,179	<u>56,346,686</u>
			84,109,557

² Because the full 2018 fiscal year payments are not yet known at the time the liability report is published, the period from 7/1/2017 to 6/30/2018 is chosen as the comparison period.

The EEOICPA Model

The EEOICPA analysis consists of the following steps:

1. Organize and aggregate the data

Compensation Benefits

2. Estimate the number of future new cases approved
3. Estimate the average compensation payout per approved case
4. Determine the payout patterns to estimate the compensation cash flow by year

Medical Benefits

5. Estimate the percentage of cases eligible for medical benefits
 6. Remove double counting – cases can be approved for both Part B and Part E
 7. Apply mortality assumptions to determine the number eligible for medical benefits
 8. Estimate the number of individuals eligible for medical benefits
 9. Estimate the average medical costs and future inflation rates
 10. Calculate the total expected medical payments
-
11. Discount the future payments to 9/30/2018

These steps are described in detail in the next sections.

1: Organize and Aggregate the Data

The EEOICPA analysis is performed using detailed claim-level data extracts provided by the DOL. Data provided includes information on medical payments by case, compensation payments by claim and case, claim disposition status (e.g., approved, denied, pending decision, etc.), and employee data such as date of birth, sex, date of death (if known), and survivor information.

The data provided for this analysis consists of a series of text data files that were imported into a Microsoft SQL database for further analysis and manipulation. The source data includes the following tables:

Table Name	Description
Bp_history	History of medical payments by case
Case_main	Employee information by case, includes RECA indicator
Causation	All causation records, includes SEC identifier
Claimant	Claim information included type of claim and filing dates
Employment	Employment information for employees, including worksite ID
FD	Final decision table by case, identifies acceptance/denial of filed claims
Medical	Medical information by case, includes disease type
Payment_mart	History of compensation payments by claim
RECA_eft	Additional RECA payments (electronic funds transfer)
RECA_paper_check	Additional RECA payments (paper check)

The data was then organized through a series of SQL queries to create summarized tables of new entrants, compensation payments, medical payments, and claims filed by living employees. These summarized tables are checked against the EEOICP Program Statistics³ (as shown in the table below), and then brought into the EEOICPA model to begin the analysis.

Comparison to EEOICP Program Statistics

Website: <https://www.dol.gov/owcp/energy/regs/compliance/weeklstats.htm>

The data on this website is updated weekly, and shows cumulative data since the inception of the program.

	Raw data as of 6/30/2018		DOL website as of 7/1/2018		Difference between raw data and 7/1/2018 website data	
	<u># Cases</u> <u>Approved</u>	<u>Payments</u>	<u># Cases</u> <u>Approved</u>	<u>Payments</u>	<u># Cases</u> <u>Approved</u>	<u>Payments</u>
Part B Compensation	52,491	6,558,544,888	52,424	6,558,544,888	-0.1%	0.0%
Part E Compensation	45,144	4,416,317,362	45,007	4,416,317,362	-0.3%	0.0%
Medical		4,198,360,871		4,214,995,313		0.4%
Total		15,173,223,121		15,189,857,563		0.1%

³ The expectation is not that the results will match exactly to the website, but that they will be reasonably close. Due to the fact that the data may reported a few days apart, and that there may be slightly differing methodologies for determining the number of approved cases, a small amount of variance is expected.

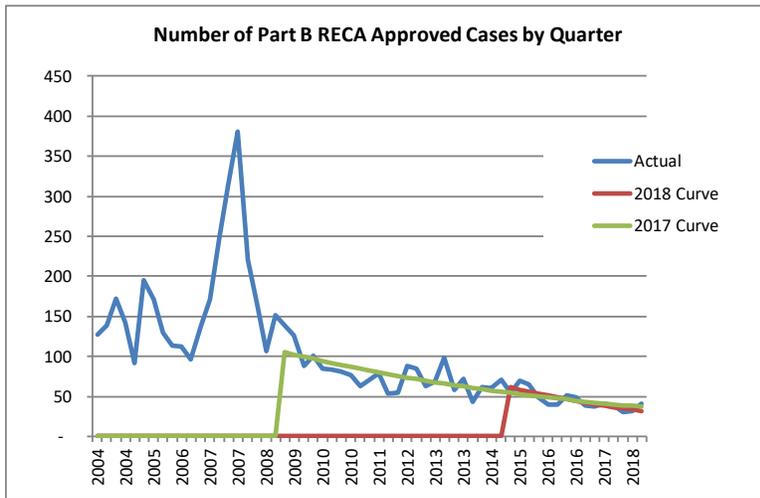
2: Estimate the number of Future Approved Cases

To estimate the number of cases that will be newly approved in the future, the historical number of newly-approved cases by quarter is determined in total for Part E and by governing disease for Part B. Part B is split out by governing disease because the compensation payment amounts are different by governing disease for Part B.

An exponential decay model is then fit to the recent history, minimizing the sum of squared errors between the actual data and the fitted data, to determine the parameters with the best fit. Judgment is used to determine how many quarters of recent history should be incorporated into the fit model, as the rate of decay differs somewhat over time. For the 9/30/2018 liability estimate, the models are based predominately on the last four years of history.

The exhibits on the following pages show a graph of the quarterly history of newly-approved cases and the modeled fit line.

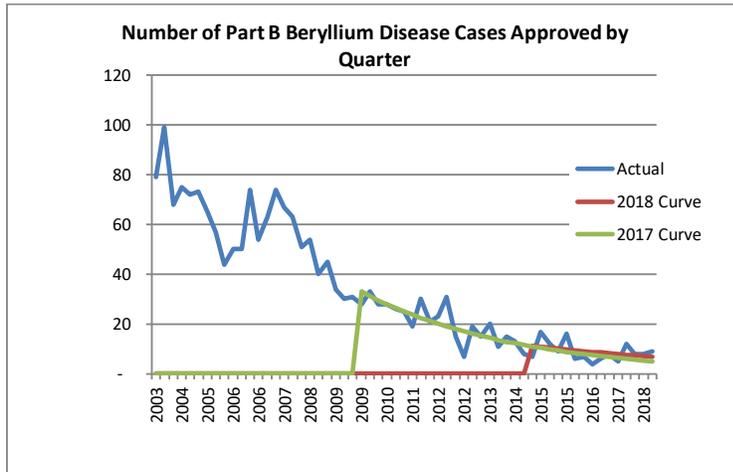
Part B: RECA



Modeled Decay Rates:

	<u>2017</u>	<u>2018</u>
Quarterly	2.7%	4.5%
Annual	10.4%	17.0%

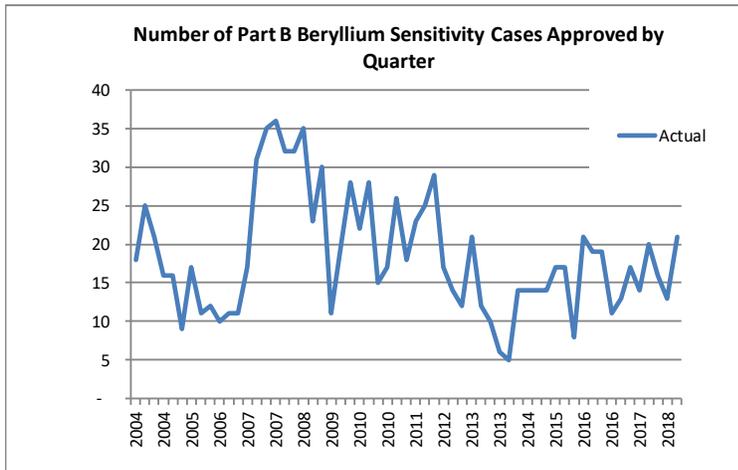
Part B: Beryllium Disease



Modeled Decay Rates:

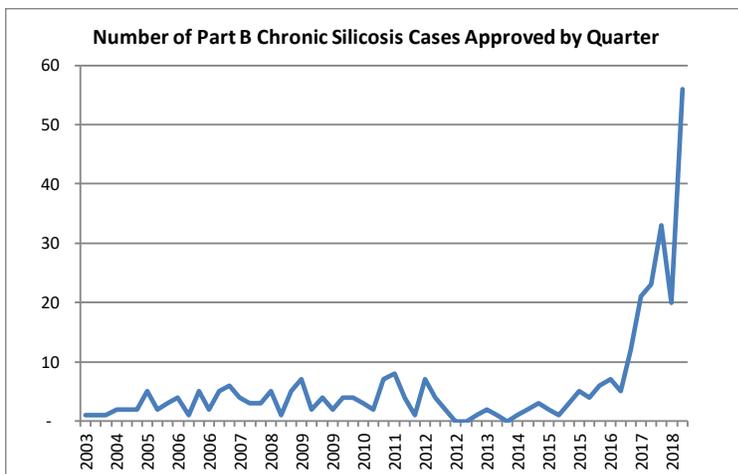
	<u>2017</u>	<u>2018</u>
Quarterly	5.4%	3.4%
Annual	19.8%	13.0%

Part B: Beryllium Sensitivity



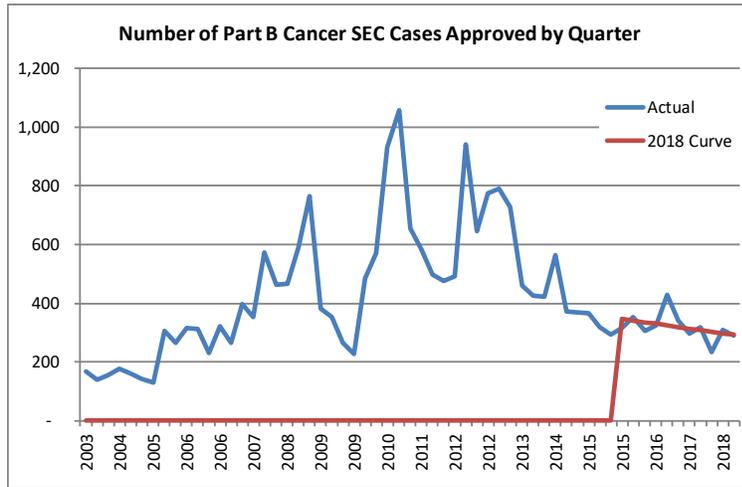
Due to the recent increase in approved cases, we did not fit a curve to the historical data for Part B Beryllium Sensitivity. Instead we assumed an average of 17 new cases per quarter in 2019 and a 2% quarterly decay going forward.

Part B: Chronic Silicosis



Due to the recent increase in approved cases, we did not fit a curve to the historical data for Part B Chronic Silicosis. Instead we assumed an average of 29 new cases per quarter in 2019 and a 2% quarterly decay going forward.

Part B: Cancer SEC

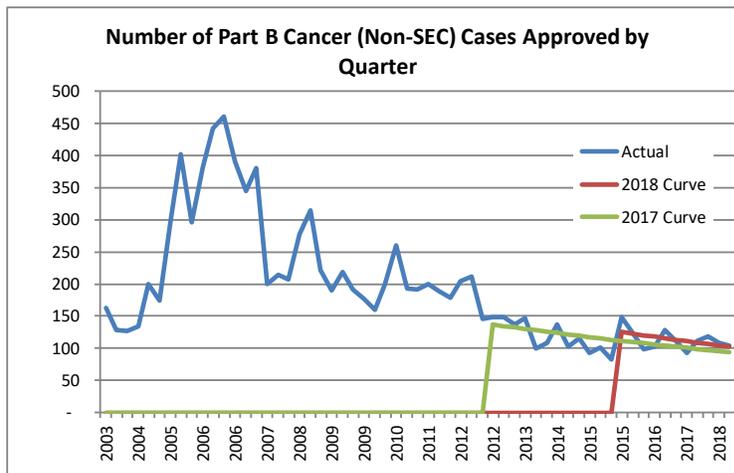


Modeled Decay Rates:

	<u>2017</u>	<u>2018</u>
Quarterly	1.7%	1.7%
Annual	6.6%	6.6%

For Cancer SEC, a decay model is fit to recent history to estimate future decay rates in the number of newly-approved cases. This method does not explicitly assume any future new SEC designations.

Part B: Cancer Non-SEC

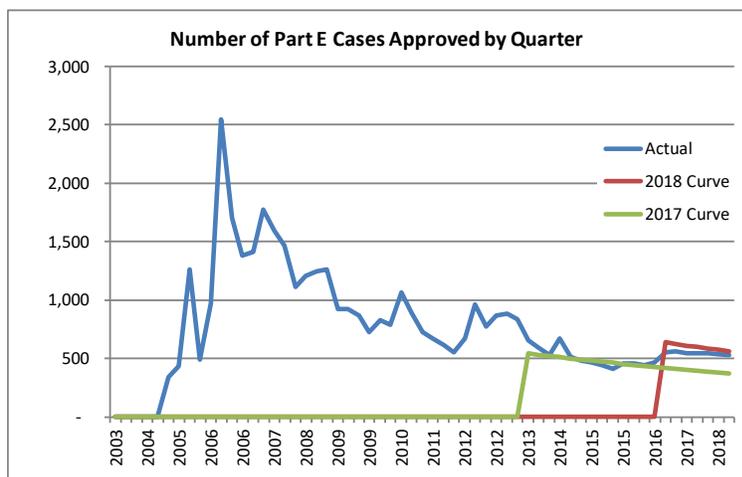


Modeled Decay Rates:

	<u>2017</u>	<u>2018</u>
Quarterly	1.7%	2.0%
Annual	6.6%	7.9%

For Cancer Non-SEC, the decay model parameters are selected using more recent data points.

Part E



Modeled Decay Rates:

	<u>2017</u>	<u>2018</u>
Quarterly	2.0%	2.0%
Annual	7.8%	7.8%

For Part E, the rate of decay was not changed, but the starting point for the projection was adjusted to be more consistent with recent history.

**ESTIMATED LIABILITY FOR EEOICPA
AS OF SEPTEMBER 30, 2018**

NUMBER OF CASES APPROVED BY YEAR

Number of Cases Approved									
Fiscal Yr	Part B							Part E	TOTAL
	RECA	BD	BS	CS	CN SEC	CN Non SEC	Part B Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Prior	2,622	1,146	400	44	2,643	255	7,110	-	7,110
2004	580	321	80	5	643	552	2,181	-	2,181
2005	588	267	53	11	740	1,073	2,732	2,034	4,766
2006	460	218	44	13	1,125	1,580	3,440	5,709	9,149
2007	1,115	258	119	17	1,337	1,316	4,162	6,152	10,314
2008	644	208	122	12	2,097	1,013	4,096	5,028	9,124
2009	454	140	89	18	1,764	823	3,288	3,966	7,254
2010	325	117	82	13	2,217	797	3,551	3,412	6,963
2011	267	100	92	21	2,794	772	4,046	2,904	6,950
2012	291	90	72	14	2,555	742	3,764	2,956	6,720
2013	296	61	49	3	2,753	581	3,743	3,243	6,986
2014	235	47	47	4	1,783	448	2,564	2,300	4,864
2015	239	45	56	9	1,349	391	2,089	1,803	3,892
2016	180	33	70	22	1,297	474	2,076	1,822	3,898
2017	154	31	64	61	1,383	444	2,137	2,202	4,339
2018	133	32	68	139	1,122	431	1,925	2,165	4,090
Through 2018							52,904	45,696	

**ESTIMATED LIABILITY FOR EEOICPA
AS OF SEPTEMBER 30, 2018**

PROJECTED NUMBER OF CASES APPROVED BY YEAR

Projected Number of Cases Approved									
Fiscal Yr	Part B							Part E	TOTAL
	RECA	BD	BS	CS	CN SEC	CN Non SEC	Part B Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2019	109	25	68	114	1,103	381	1,800	2,100	3,900
2020	90	21	63	105	1,030	351	1,661	1,937	3,598
2021	75	19	58	97	962	323	1,534	1,787	3,321
2022	62	16	54	90	898	298	1,418	1,648	3,066
2023	52	14	50	83	839	275	1,311	1,520	2,831
2024	43	12	46	76	783	253	1,213	1,402	2,615
2025	36	11	42	70	731	233	1,123	1,293	2,416
2026	30	9	39	65	683	215	1,040	1,193	2,233
2027	25	8	36	60	637	198	964	1,100	2,064
2028	20	7	33	55	595	182	893	1,015	1,908
2029	17	6	31	51	556	168	828	936	1,764
2030	14	5	28	47	519	155	768	863	1,631
2031	12	5	26	43	484	143	713	796	1,509
2032	10	4	24	40	452	131	661	734	1,396
2033	8	4	22	37	422	121	614	677	1,291
2034	7	3	20	34	394	112	570	625	1,195
2035	6	3	19	31	368	103	529	576	1,106
2036	5	2	17	29	344	95	492	532	1,023
2037	4	2	16	27	321	87	457	490	947
2038	3	2	15	25	300	80	424	452	877
2039	3	2	14	23	280	74	394	417	812
2040	2	1	13	21	261	68	367	385	751
2041	2	-	12	19	244	63	340	355	695
2042	2	-	11	18	228	58	316	327	643
2043	1	-	10	16	213	53	294	302	596
2044	1	-	9	15	199	49	273	279	552
2045	1	-	8	14	185	45	254	257	511
2046	1	-	8	13	173	42	236	237	473
2047	1	-	7	12	162	38	220	219	438
2048	-	-	7	11	151	35	204	202	406
2049	-	-	-	-	141	-	141	186	327
2050	-	-	-	-	132	-	132	171	303
2051	-	-	-	-	123	-	123	158	281
2052	-	-	-	-	115	-	115	146	261

3: Estimate the average compensation payment per case

Part B Compensation

For Part B, the compensation benefit is paid out as a lump sum. The amount of the benefit varies by governing disease as follows:

RECA (Non-DOJ portion)	\$50,000
RECA (DOJ portion)	\$100,000
Beryllium Disease, Cancer, Chronic Silicosis	\$150,000
Beryllium Sensitivity (Part B)	\$0

Under Part B, Beryllium Sensitivity cases are approved for medical benefits only. They do not receive compensation benefits. If the case develops into Beryllium Disease, it would then be eligible for compensation benefits.

Part E Compensation

Part E cases are eligible for wage loss benefits, impairment benefits and survivor benefits subject to a maximum payment of \$250,000 total compensation for the employee and survivor combined.

For Part E, historically only 36% of the compensation benefits are paid within one fiscal year of approval. This is due to the nature of the benefit payments. Employee claimants can file for additional wage or impairment payments subsequent to the initial case approval, and the survivors of the employee may be eligible to receive a lump sum benefit upon the death of the employee years after the initial case approval.

We need a cradle-to-grave cost estimate to apply to future new entrants. Because of the development of payments over time, we employed a triangle squaring approach where we organized the compensation data into a paid triangle by approval quarter and payment quarter. Historical relationships between quarters were then measured and projected forward to determine the ultimate payments by approval quarter from 2005 to the present. There are a number of approved cases for which compensation payments have not been made and appear unlikely to be made in the future. We built a triangle of counts by approval quarter and quarter of first payment, and with it, developed an estimate of the total count of cases from 2005 to the present that will ultimately be paid. The average projected ultimate payment per approved case, excluding projected no-payment cases was \$149,275. We are applying this estimate to projected future new entrants, without projecting no-payment cases. This is a conservative assumption.

Part E Average Compensation	\$149,275
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For more detail on the triangle squaring analysis, see Appendix 3.

4: Payout patterns

Multiplying the number of cases from Step 2 times the average compensation benefit payment per case will determine the total amount of compensation benefit for new cases.

The next step is to estimate cash flow by fiscal year. To estimate the cash flow, it is necessary to know the timing of the benefit payments.

The historical data shows that the majority of the Part B cases pay the full amount of the compensation benefit within the same fiscal year as the case approval.

Part B Compensation Payout Pattern

Year 1	100%
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To determine the payout pattern for Part E benefits, we relied on the triangle analysis described in Section 3 on the previous page.

Part E Compensation Payout Pattern

<u>Year</u>	<u>% Paid</u>
Year 1	35.9%
Year 2	21.8%
Year 3	6.2%
Year 4	5.8%
Year 5	4.3%
Year 6	3.7%
Year 7	3.2%
Year 8	2.7%
Year 9	2.8%
Year 10	2.7%
Year 11	2.4%
Year 12	2.3%
Year 13	1.4%
Year 14	0.2%
Years 15-25	0.4%

For more detail on the payment pattern analysis, please see Appendix 3.

5: Estimate the number of cases eligible for medical benefits

The next step in the process is to estimate the future medical payments.

Only the cases in which an approved claim was filed by an employee are eligible for medical benefits. The pool of individuals eligible to receive medical benefits includes both existing and newly approved cases that were filed by an employee (as long as the employee is still alive).

Historical ratios were used to select the percentage of future cases expected to contain an approved claim filed by an employee (and thus eligible for medical benefits).

% of Newly-Approved Cases that were filed by an Employee

	<u>RECA</u>	<u>BD</u>	<u>BS</u>	<u>CS</u>	<u>CN SEC</u>	<u>CN Non SEC</u>	<u>E</u>
9/30/2015	63%	67%	100%	100%	54%	72%	74%
12/31/2015	60%	69%	100%	60%	47%	57%	75%
3/31/2016	65%	33%	100%	75%	50%	66%	75%
6/30/2016	57%	86%	100%	83%	52%	60%	78%
9/30/2016	59%	75%	100%	86%	54%	71%	77%
12/31/2016	55%	100%	100%	80%	51%	64%	71%
3/31/2017	57%	75%	100%	92%	46%	72%	76%
6/30/2017	63%	80%	100%	95%	57%	61%	81%
9/30/2017	63%	67%	100%	83%	56%	69%	82%
12/31/2017	60%	88%	94%	91%	52%	64%	80%
3/31/2018	75%	50%	100%	100%	57%	79%	81%
6/30/2018	56%	89%	100%	93%	61%	73%	83%
2-yr average	61%	78%	99%	90%	54%	69%	79%
1-yr average	64%	73%	98%	92%	56%	71%	82%
Prev selected	65%	69%	100%	87%	48%	64%	69%
Selected	65%	73%	100%	87%	54%	69%	82%

The selected ratios are then applied to future approved cases in all future years, to estimate the number of future cases that will be eligible for medical benefits.

6: Remove double counting

Cases can be approved for Part B alone, Part E alone, or for both Part B and Part E. Cases approved for either Part are eligible to receive medical benefits. The number of approved cases is being projected separately by Part, so the total count of approved cases will count many, but not all, of the individuals twice (once for Part B and once for Part E). Historical ratios are used to determine how the approved cases need to be reduced in order to convert the number of approved cases to the number of individuals eligible for medical benefits.

Because the approval decisions are made separately for each Part (for example, a case could receive approval for Part B and then months or years later receive approval for Part E), a reduction in the case count is made for the assumption that some of the newly approved cases will have already been approved for the other Part and thus are already included in the count of individuals eligible for medical benefits.

We assume that 9.1% of newly-approved Part B cases have already been approved for Part E, and that 0.7% of newly-approved Part E cases have already been approved for Part B.

Percent of Part B cases filed by an employee that had previously been accepted as a Part E case		Percent of Part E cases filed by an employee that had previously been accepted as a Part B case	
<u>FY</u>	<u>Percent</u>	<u>FY</u>	<u>Percent</u>
2004	0.0%	2004	0.0%
2005	0.0%	2005	20.5%
2006	1.2%	2006	58.9%
2007	0.8%	2007	30.4%
2008	2.5%	2008	16.1%
2009	5.9%	2009	6.1%
2010	10.2%	2010	1.4%
2011	9.2%	2011	1.5%
2012	10.6%	2012	1.5%
2013	7.9%	2013	0.8%
2014	9.1%	2014	0.6%
2015	9.1%	2015	0.8%
2016	8.6%	2016	0.8%
2017	9.6%	2017	0.6%
2018	9.1%	2018	0.7%
Selected	9.1%	Selected	0.7%

Additionally, some cases will receive an approval for both Part B and Part E at the same time, or in the same fiscal year. A reduction must be made so that these two approved case parts are not treated as two separate individuals eligible for medical benefits. Historically, approximately 79% of the employee-filed Part B cases also are approved for Part E at the same time. We assume that this ratio will continue into the future.

Percent of Part B cases filed by an employee where Part E is approved in the same year		Percent of Part E cases filed by an employee where Part B is approved in the same year	
<u>FY</u>	<u>Percent</u>	<u>FY</u>	<u>Percent</u>
2004	0.0%	2004	0.0%
2005	2.2%	2005	10.9%
2006	71.4%	2006	32.6%
2007	88.9%	2007	46.3%
2008	82.7%	2008	49.4%
2009	80.6%	2009	47.8%
2010	80.0%	2010	60.3%
2011	69.3%	2011	60.8%
2012	74.2%	2012	67.7%
2013	81.9%	2013	69.0%
2014	78.3%	2014	63.8%
2015	79.3%	2015	70.5%
2016	79.4%	2016	67.4%
2017	79.3%	2017	58.4%
2018	79.0%	2018	54.8%
Selected	79.0%		

To convert the number of approved employee-filed cases into the number of employee-filed cases eligible for medical benefits, we reduce the number of newly-approved employee-filed Part B cases by 9.1%, reduce the number of newly-approved employee-filed Part E cases by 0.7% (as shown on the previous page) and then reduce the newly-approved employee-filed Part B cases by 79% to estimate the total number of cases eligible for medical benefits by year.

7: Mortality

Because the EEOICPA program is not always notified when a participant is deceased, the number of individuals that are still alive and eligible for medical benefits must be estimated, using mortality assumptions. The model uses the RP-2014 Male Disabled Retiree mortality table and assumes that employees are age 72 at the time that the first claim is approved⁴.

Average Age of Employee at First Case Approval Date

Part B			Part E		
<u>FY</u>	<u>Count</u>	<u>Avg Age at Award</u>	<u>FY</u>	<u>Count</u>	<u>Avg Age</u>
2001	116	71.0			
2002	1,734	66.5			
2003	1,488	64.5			
2004	929	68.7			
2005	1,167	70.4	2005	239	69.1
2006	1,488	72.2	2006	3,263	70.4
2007	1,970	70.6	2007	3,781	71.1
2008	1,701	71.9	2008	2,846	70.9
2009	1,372	72.8	2009	2,309	70.8
2010	1,561	72.3	2010	2,069	70.7
2011	1,574	72.6	2011	1,793	71.1
2012	1,640	73.3	2012	1,792	72.3
2013	1,786	70.9	2013	2,110	70.2
2014	1,295	72.7	2014	1,589	71.4
2015	1,141	72.8	2015	1,281	72.3
2016	1,179	73.7	2016	1,383	72.5
2017	1,258	73.3	2017	1,705	72.5
2018	954	72.8	2018	1,317	71.9
Average 2010-2018		72.7	Average 2010-2018		71.7

⁴ The exception to this assumption is for employees for which the first case approval date was more than 15 years ago. For these employees, the model uses a weighted average of the actual age at approval.

8: Estimate the Number of Individuals eligible for medical benefits

The total number of individuals eligible to receive medical benefits each year is then the number of individuals with prior case approvals, assumed to be still alive, plus the number of newly-approved cases (adjusted to remove double counting of cases approved for both Parts) minus the number of expected deaths, as shown below:

ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2018

ESTIMATED NUMBER OF INDIVIDUALS ELIGIBLE FOR MEDICAL EXPENSES

Fiscal Year	New Cases Eligible for Medical Expenses							Remove double counting:				Assumed # Deaths	Total # Individuals Eligible	Average # Individuals Eligible
	RECA	BD	BS	CS	CN		Part E	Part B	Part E	EB	Net new			
	(2)	(3)	(4)	(5)	SEC	Non SEC	(8)	already in	already in	concurrent	Individuals			
Prior	929	881	400	34	966	128	-	-	-	-	3,338	(116)	3,222	
2004	318	133	80	4	220	174	-	-	-	-	929	(154)	3,998	3,610
2005	394	124	53	10	221	365	239	-	(49)	(26)	1,331	(216)	5,113	4,555
2006	329	106	44	12	315	682	3,263	(18)	(1,923)	(1,063)	1,747	(298)	6,563	5,838
2007	782	147	119	11	375	535	3,781	(15)	(1,151)	(1,751)	2,833	(429)	8,966	7,764
2008	379	133	121	10	594	461	2,846	(42)	(458)	(1,405)	2,639	(554)	11,051	10,009
2009	269	90	89	11	464	446	2,309	(81)	(142)	(1,104)	2,351	(667)	12,735	11,893
2010	192	83	82	9	735	458	2,069	(159)	(28)	(1,247)	2,194	(773)	14,156	13,446
2011	162	65	92	15	767	472	1,793	(145)	(26)	(1,090)	2,105	(876)	15,385	14,770
2012	184	60	72	10	866	442	1,792	(173)	(26)	(1,213)	2,014	(975)	16,424	15,905
2013	216	42	49	3	1,115	352	2,110	(140)	(16)	(1,456)	2,275	(1,085)	17,615	17,019
2014	148	35	47	4	749	312	1,589	(118)	(10)	(1,014)	1,742	(1,170)	18,187	17,901
2015	158	34	56	7	629	254	1,281	(103)	(10)	(903)	1,403	(1,238)	18,352	18,270
2016	108	22	70	17	658	299	1,383	(101)	(11)	(932)	1,513	(1,308)	18,557	18,455
2017	92	24	64	54	723	297	1,705	(121)	(10)	(995)	1,833	(1,390)	19,000	18,779
2018	87	23	68	121	606	298	1,775	(109)	(12)	(950)	1,906	(1,472)	19,435	19,218

Notes:

(2)-(8) = Number of approved cases * percent of cases filed by employee

(12) = Sum of (2) through (11)

(13) = Mortality tables applied to the average number of individuals eligible

(14) = (14) from previous year + (12) + (13)

(15) = Average of (14) from previous year and (14) from current year

**ESTIMATED LIABILITY FOR EEOICPA
AS OF SEPTEMBER 30, 2018**

ESTIMATED NUMBER OF INDIVIDUALS ELIGIBLE FOR MEDICAL EXPENSES

Fiscal Year	New Cases Eligible for Medical Expenses							Remove double counting:					Assumed # Deaths	Total # Individuals Eligible	Average # Individuals Eligible
	RECA	BD	BS	CS	CN		Part E	Part B already in	Part E already in concurrent	EB	Net new Individuals				
					CN SEC	Non SEC									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
2019	71	18	68	99	596	263	1,722	(101)	(12)	(881)	1,843	(1,546)	19,732	19,583	
2020	59	16	63	92	556	242	1,588	(93)	(11)	(812)	1,699	(1,608)	19,823	19,777	
2021	49	14	58	84	519	223	1,465	(86)	(10)	(748)	1,568	(1,659)	19,731	19,777	
2022	40	12	54	78	485	206	1,351	(80)	(9)	(691)	1,446	(1,697)	19,480	19,605	
2023	34	10	50	72	453	189	1,246	(73)	(9)	(638)	1,334	(1,723)	19,091	19,285	
2024	28	9	46	66	423	175	1,150	(68)	(8)	(589)	1,230	(1,735)	18,586	18,838	
2025	23	8	42	61	395	161	1,060	(63)	(7)	(545)	1,135	(1,734)	17,987	18,286	
2026	19	7	39	56	369	148	978	(58)	(7)	(504)	1,047	(1,721)	17,313	17,650	
2027	16	6	36	52	344	137	902	(54)	(6)	(466)	966	(1,695)	16,584	16,949	
2028	13	5	33	48	321	126	832	(50)	(6)	(432)	891	(1,658)	15,817	16,201	
2029	11	4	31	44	300	116	767	(46)	(5)	(400)	822	(1,611)	15,028	15,423	
2030	9	4	28	41	280	107	708	(43)	(5)	(371)	759	(1,557)	14,230	14,629	
2031	8	3	26	38	262	98	653	(40)	(5)	(343)	700	(1,497)	13,433	13,832	
2032	6	3	24	35	244	91	602	(37)	(4)	(318)	646	(1,433)	12,646	13,040	
2033	5	3	22	32	228	84	556	(34)	(4)	(295)	596	(1,366)	11,877	12,262	
2034	4	2	20	30	213	77	512	(32)	(4)	(274)	550	(1,298)	11,129	11,503	
2035	4	2	19	27	199	71	473	(29)	(3)	(254)	508	(1,230)	10,407	10,768	
2036	3	2	17	25	186	65	436	(27)	(3)	(236)	468	(1,162)	9,713	10,060	
2037	2	1	16	23	173	60	402	(25)	(3)	(219)	432	(1,095)	9,050	9,382	
2038	2	1	15	21	162	55	371	(23)	(3)	(203)	399	(1,030)	8,420	8,735	
2039	2	1	14	20	151	51	342	(22)	(2)	(188)	368	(966)	7,822	8,121	
2040	1	1	13	18	141	47	316	(20)	(2)	(175)	340	(904)	7,258	7,540	
2041	1	-	12	17	132	43	291	(19)	(2)	(162)	313	(844)	6,727	6,992	
2042	1	-	11	15	123	40	268	(17)	(2)	(150)	289	(787)	6,229	6,478	
2043	1	-	10	14	115	37	248	(16)	(2)	(140)	267	(733)	5,763	5,996	
2044	1	-	9	13	107	34	228	(15)	(2)	(130)	246	(681)	5,329	5,546	
2045	1	-	8	12	100	31	211	(14)	(1)	(121)	227	(631)	4,925	5,127	
2046	0	-	8	11	94	29	194	(13)	(1)	(112)	210	(585)	4,549	4,737	
2047	0	-	7	10	87	27	179	(12)	(1)	(104)	194	(542)	4,201	4,375	
2048	-	-	7	10	82	24	165	(11)	(1)	(96)	179	(501)	3,879	4,040	
2049	-	-	-	-	76	-	152	(7)	(1)	(60)	160	(463)	3,576	3,728	
2050	-	-	-	-	71	-	141	(6)	(1)	(56)	148	(427)	3,297	3,437	
2051	-	-	-	-	66	-	130	(6)	(1)	(52)	137	(395)	3,039	3,168	
2052	-	-	-	-	62	-	120	(6)	(1)	(49)	126	(364)	2,801	2,920	
2053	-	-	-	-	-	-	-	-	-	-	-	(331)	2,471	2,636	
2054	-	-	-	-	-	-	-	-	-	-	-	(300)	2,171	2,321	
2055	-	-	-	-	-	-	-	-	-	-	-	(271)	1,900	2,036	
2056	-	-	-	-	-	-	-	-	-	-	-	(244)	1,656	1,778	
2057	-	-	-	-	-	-	-	-	-	-	-	(220)	1,436	1,546	
2058	-	-	-	-	-	-	-	-	-	-	-	(197)	1,239	1,338	
2059	-	-	-	-	-	-	-	-	-	-	-	(176)	1,063	1,151	
2060	-	-	-	-	-	-	-	-	-	-	-	(157)	906	985	
2061	-	-	-	-	-	-	-	-	-	-	-	(139)	767	837	
2062	-	-	-	-	-	-	-	-	-	-	-	(122)	645	706	
2063	-	-	-	-	-	-	-	-	-	-	-	(107)	538	591	
2064	-	-	-	-	-	-	-	-	-	-	-	(93)	444	491	
2065	-	-	-	-	-	-	-	-	-	-	-	(81)	364	404	
2066	-	-	-	-	-	-	-	-	-	-	-	(69)	294	329	
2067	-	-	-	-	-	-	-	-	-	-	-	(59)	236	265	
2068	-	-	-	-	-	-	-	-	-	-	-	(49)	186	211	
2069	-	-	-	-	-	-	-	-	-	-	-	(41)	145	166	
2070	-	-	-	-	-	-	-	-	-	-	-	(34)	112	129	
2071	-	-	-	-	-	-	-	-	-	-	-	(27)	85	98	
2072	-	-	-	-	-	-	-	-	-	-	-	(22)	63	74	
2073	-	-	-	-	-	-	-	-	-	-	-	(17)	46	55	
2074	-	-	-	-	-	-	-	-	-	-	-	(13)	33	40	
2075	-	-	-	-	-	-	-	-	-	-	-	(10)	24	29	
2076	-	-	-	-	-	-	-	-	-	-	-	(7)	16	20	
2077	-	-	-	-	-	-	-	-	-	-	-	(5)	11	14	
2078	-	-	-	-	-	-	-	-	-	-	-	(4)	8	9	

9: Estimate Average Medical Payments and Inflation Rates

The total medical payments each year are divided by the average number of eligible individuals to determine the average medical payment per eligible individual for each year.

Average Medical Payment in 2018	\$39,139
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We then select the medical inflation rate assumptions for future years.

The average medical inflation rates for future years 1-5 were selected based on guidance from OWCP management regarding expected cost increases in the short term. Medical inflation rates for 6 years and later are the CPI-Medical inflation rates the OMB Economic Assumptions for the 2019 Mid-Session Review.

Annual Inflation for Medical, Future Year 1	4.30%
Annual Inflation for Medical, Future Year 2	4.30%
Annual Inflation for Medical, Future Year 3	2.60%
Annual Inflation for Medical, Future Year 4	2.60%
Annual Inflation for Medical, Future Year 5	2.50%
Annual Inflation for Medical, Future Years 6+	3.90%

10: Calculate the total expected Medical Payment by year

The total number of individuals eligible is then multiplied by the average medical cost per eligible individual to determine the expected medical payments by fiscal year, as shown below.

<u>FY</u>	<u>Average # Individuals Eligible</u> (1)	<u>Average Medical Cost per Eligible Individual</u> (2)	<u>Total Undiscounted Medical Payments</u> (3)
2019	19,583	40,822	799,426,224
2020	19,777	42,577	842,055,299
2021	19,777	43,684	863,934,408
2022	19,605	44,820	878,708,786
2023	19,285	45,940	885,965,717
2024	18,838	47,732	899,190,322
2025	18,286	49,594	906,884,125
2026	17,650	51,528	909,458,291
2027	16,949	53,537	907,381,471
2028	16,201	55,625	901,170,547
2029	15,423	57,795	891,361,117
2030	14,629	60,049	878,466,630
2031	13,832	62,391	862,965,180
2032	13,040	64,824	845,293,416
2033	12,262	67,352	825,841,307
2034	11,503	69,979	804,947,420
2035	10,768	72,708	782,904,235
2036	10,060	75,544	759,970,458
2037	9,382	78,490	736,381,609
2038	8,735	81,551	712,355,029
2039	8,121	84,731	688,091,332
2040	7,540	88,036	663,774,091
2041	6,992	91,469	639,564,616
2042	6,478	95,037	615,609,987
2043	5,996	98,743	592,042,104
After 2043			<u>7,612,277,327</u>
Total future undiscounted			27,706,021,049

11: Discount the cash flows to 9/30/2018

The projected cash flows by fiscal year are then discounted back to 9/30/2018. The discount rates for compensation and medical payments are determined based on the duration of the liabilities. The rate used for discounting corresponds to the point on the Treasury yield curve for that duration. The Treasury curve being used is based on a five-year averaging of the U.S. Department of Treasury's Yield Curve for Treasury Nominal Coupon Issues.

Discount rate for compensation payments	2.531%
Discount rate for medical payments	2.875%

Ranges

We have calculated a range of reasonable estimates to clarify the level of uncertainty surrounding the EEIOCPA liability estimate and have shared that range with OWCP management. This includes a low, high and middle range of estimates. We recommend OWCP to use the middle range value of \$24.0 billion as the best estimate for financial reporting purposes. Significant uncertainty exists around these estimates, and the reader of this report should not confuse any level of reported precision in the estimates contained in this report to be indicative of predictive accuracy.

Appendix 1: Reconciliation of Change in Liability Estimate

Liability Estimate as of 9/30/2017 (\$millions, discounted to 9/30/17).....	\$19,979
1. FY 2018 roll off of estimate	(1,214)
2. FY 2077-78 roll on to estimate	1
3. Discount to 9/30/18 instead of 9/30/17	617
4. More approvals in 2017-2018 than projected	370
5. 2018 medical cost greater than projected	1,700
6. Revised projection of future Part E approvals	4,200
7. Revised projection of future Part B approvals	(125)
8. Revised medical inflation rate assumptions	(2,900)
9. Revised assumptions for percent filed by an employee	1,600
10. Combination effect/other	(204)
Total Change	4,045
Liability Estimate as of 9/30/2018 (\$millions, discounted to 9/30/18).....	\$24,024

Appendix 2: Summary of EEOICPA Model Assumptions

	as of 9/30/2018	as of 9/30/2017
Compensation Benefit Amounts		
RECA Benefit (Non DOJ)	\$50,000	\$50,000
RECA Benefit (on behalf of DOJ)	\$100,000	\$100,000
Part B Benefit (lump sum)	\$150,000	\$150,000
Part E Benefit, average	\$149,275	\$142,114
Discount Rates		
Discount Factor for Compensation	2.531%	2.395%
Discount Factor for Medical	2.875%	2.897%
Duration		
Average Compensation Duration (years)	11.5	11.1
Average Medical Duration (years)	18.4	18.8
Inflation Rates		
Annual Inflation for Compensation	0.00%	0.00%
Annual Inflation for Medical, Future Year 1	4.30%	6.00%
Annual Inflation for Medical, Future Year 2	4.30%	6.00%
Annual Inflation for Medical, Future Year 3	2.60%	6.00%
Annual Inflation for Medical, Future Year 4	2.60%	6.00%
Annual Inflation for Medical, Future Year 5	2.50%	5.00%
Annual Inflation for Medical, Future Years 6+	3.90%	5.00%
Mortality		
Mortality Table	RP-2014 Male Disabled Retiree	RP-2014 Male Disabled Retiree
Projection Scale	No projection	No projection
RP-2014 Table Multiplier (for sensitivity testing)	1.00	na
New Cases		
Eligible for medical benefits if filed by employee	100%	100%
Average age of employee when case approved ⁵	72	72
Percent of new cases filed by employee		
RECA (Part B)	65%	65%
BD (Part B)	73%	69%
BS (Part B)	100%	100%
CS (Part B)	87%	87%
CN SEC (Part B)	54%	48%
CN Non SEC (Part B)	69%	64%
Part E	82%	69%

⁵ The exception to this assumption is for employees for which the first case approval date was more than 15 years ago. For these employees, the model uses a weighted average of the actual age at approval.

	as of 9/30/2018	as of 9/30/2017
Probability that the newly-approved case is already eligible for medical benefits		
Part B	9.1%	8.0%
Part E	0.7%	0.7%
 Part B cases where Part E approved same year	 79%	 80%
Quarterly Decay in new case approval		
RECA (Part B)	4.5%	2.7%
BD (Part B)	3.4%	5.4%
BS (Part B)	2.0%	2.0%
CS (Part B)	2.0%	2.0%
CN SEC (Part B)	1.7%	1.7%
CN Non SEC (Part B)	2.0%	1.7%
Part E	2.0%	2.0%

Payment Pattern: Part B Compensation

<u>Year</u>	<u>% Paid</u>	<u>% Paid</u>
Year 1	100.0%	100%

Payment Pattern: Part E Compensation

<u>Year</u>	<u>% Paid</u>	<u>% Paid</u>
Year 1	35.9%	38.0%
Year 2	21.8%	21.4%
Year 3	6.2%	6.0%
Year 4	5.8%	5.3%
Year 5	4.3%	4.0%
Year 6	3.7%	3.5%
Year 7	3.2%	3.1%
Year 8	2.7%	2.7%
Year 9	2.8%	2.7%
Year 10	2.7%	2.7%
Year 11	2.4%	2.3%
Year 12	2.3%	1.5%
Year 13	1.4%	0.5%
Year 14	0.2%	0.5%
Years 15-25	0.4%	0.5%

Appendix 3: Part E Compensation Payments

In order to estimate the Part E compensation payout patterns and ultimate payment amount per case, we employed a triangle squaring approach. We organized the compensation data into a paid triangle by approval quarter and payment quarter. Historical relationships between quarters were then measured and projected forward to determine the ultimate payments by approval quarter from 2005 to the present. There are a number of approved cases for which compensation payments have not been made and appear unlikely to be made in the future. We built a triangle of counts by approval quarter and quarter of first payment, and with it, developed an estimate of the total count of cases from 2005 to the present that will ultimately be paid.

The exhibits in the following pages show the triangle of payment amounts, the age-to-age factors as well as the selection of ultimate payments using a weighting of the LDF Method and the BF Method.

Loss Development Factor (LDF) Method

The LDF method applies a loss development factor to paid cases by period (in this case, approval quarter) to arrive at an estimate of the ultimate losses incurred in that period. The loss development factor varies by the maturity of the period. Loss development factors are selected based on review of historical development and actuarial judgment to consider items such as credibility of observed data and changing patterns within the aggregated data.

Bornhuetter-Ferguson (BF) Method

The BF method uses a development pattern coinciding with the loss development factors used in the LDF method in conjunction with an a priori, or “seed” estimate for a given period estimate an ultimate amount of payment. This seed loss estimate was based on a moving average of LDF model results. This approach is more stable with regard to the random fluctuation from period than the LDF method alone, but still captures changes in the level of payments over time.

Part E Compensation
Summary of Results: Paid Losses

	Current Paid	Paid LDF Indication	Paid BF Indication	Prior Selection	Selected Ultimate	Ultimate Number of Cases	Ultimate Payment Amount per Case
2005-1	42,358,276	44,476,190	44,692,479	47,615,449	44,683,849	330	135,406
2005-2	50,968,170	53,598,128	55,324,671	55,672,192	55,255,782	398	138,834
2005-3	159,824,326	168,103,226	164,487,462	165,880,875	164,631,731	1,234	133,413
2005-4	59,541,131	62,637,270	65,094,896	67,254,728	64,996,837	462	140,686
2006-1	101,100,130	106,468,547	108,493,447	108,980,513	108,412,653	791	137,058
2006-2	256,489,270	270,827,020	266,507,366	259,174,325	266,679,720	1,988	134,145
2006-3	180,049,646	190,780,605	191,599,319	187,643,917	191,566,652	1,384	138,415
2006-4	145,345,603	154,967,482	155,867,715	156,534,565	155,831,796	1,124	138,640
2007-1	151,750,950	162,616,318	163,611,584	161,332,994	163,571,873	1,170	139,805
2007-2	199,534,522	215,098,215	213,412,342	208,701,391	213,479,608	1,520	140,447
2007-3	182,024,135	197,277,758	197,089,055	192,909,760	197,096,584	1,363	144,605
2007-4	157,869,718	172,267,436	171,724,813	170,346,787	171,746,464	1,221	140,660
2008-1	116,098,410	127,626,982	129,362,866	129,027,927	129,293,604	932	138,727
2008-2	127,218,719	140,691,181	140,494,357	139,767,167	140,502,210	1,023	137,343
2008-3	132,240,146	147,302,299	147,205,818	144,383,014	147,209,668	1,062	138,616
2008-4	134,564,332	150,846,616	149,354,573	148,057,837	149,414,106	1,061	140,824
2009-1	100,137,577	113,015,269	114,392,139	112,967,002	114,337,202	791	144,548
2009-2	98,264,115	111,677,167	111,429,333	111,077,960	111,439,222	797	139,823
2009-3	91,081,882	104,297,863	103,967,652	102,363,948	103,980,827	721	144,218
2009-4	77,308,560	89,275,925	90,504,419	88,661,817	90,455,402	614	147,322
2010-1	87,457,490	101,861,739	100,918,773	99,776,272	100,956,397	704	143,404
2010-2	80,425,453	94,451,652	96,004,499	93,689,726	95,942,540	650	147,604
2010-3	99,950,581	118,431,443	116,394,603	114,137,599	116,475,873	859	135,595
2010-4	86,721,549	103,441,464	103,156,754	100,722,649	103,168,114	721	143,090
2011-1	69,379,658	83,318,031	84,265,610	83,015,792	84,227,802	581	144,970
2011-2	66,182,592	80,186,828	79,741,155	77,980,317	79,758,937	533	149,642
2011-3	56,871,042	69,467,978	69,665,539	69,238,576	69,657,656	486	143,329
2011-4	50,358,829	62,072,293	63,501,599	64,393,993	63,444,570	444	142,893
2012-1	62,273,279	77,411,913	78,636,584	76,169,973	78,587,720	543	144,729
2012-2	88,871,231	111,480,072	107,269,466	105,094,510	107,437,469	772	139,168
2012-3	65,762,694	83,275,299	86,453,350	84,543,343	86,326,546	597	144,601
2012-4	78,474,205	100,392,050	99,293,555	97,884,973	99,337,385	691	143,759
2013-1	78,972,293	102,434,961	101,888,263	97,606,959	101,910,076	716	142,333
2013-2	74,178,685	97,381,778	96,010,030	91,341,860	96,064,763	676	142,108
2013-3	56,504,803	75,010,126	76,366,793	73,318,233	76,312,662	555	137,500
2013-4	51,419,888	69,134,039	69,038,060	68,530,943	69,041,890	496	139,197
2014-1	45,738,957	62,150,095	64,019,473	61,514,578	63,944,885	441	145,000
2014-2	55,290,644	76,384,025	73,497,125	70,913,622	73,612,312	539	136,572
2014-3	42,317,492	59,299,502	60,990,812	57,784,952	60,923,329	420	145,056
2014-4	42,116,815	59,928,016	60,055,950	57,772,289	60,050,845	405	148,274
2015-1	42,711,879	61,863,886	61,250,578	56,191,766	61,275,049	403	152,047
2015-2	39,165,203	57,850,921	57,975,509	55,119,065	57,970,538	371	156,255
2015-3	36,331,684	54,984,371	55,752,336	52,754,163	55,721,694	362	153,927
2015-4	37,895,740	58,912,717	58,632,865	55,101,652	58,644,031	389	150,756
2016-1	38,120,929	60,505,539	60,242,985	55,497,714	60,253,461	395	152,540
2016-2	37,034,969	59,963,318	60,814,176	58,726,772	60,780,227	401	151,572
2016-3	39,902,084	66,137,704	66,652,235	61,425,264	66,631,705	431	154,598
2016-4	44,870,088	76,113,130	75,395,861	68,565,783	75,424,480	503	149,949
2017-1	46,073,154	80,835,349	79,286,797	65,956,080	79,348,584	508	156,198
2017-2	40,591,009	74,764,579	76,415,956	59,653,505	76,350,066	498	153,313
2017-3	39,999,453	79,442,914	79,858,592	-	79,842,006	502	159,048
2017-4	37,479,102	86,719,146	81,873,147	-	82,066,502	539	152,257
2018-1	21,547,152	68,401,434	68,831,181	-	68,814,034	459	149,922
2018-2	9,512,500	51,954,421	58,673,640	-	58,405,543	396	147,489
Total	4,414,272,744	5,409,814,230	5,413,440,157	4,992,777,091	5,413,295,481	37,972	
						2013-2018	149,275

Part E Compensation

Cumulative Payments by Approval Quarter

Approval Quarter	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9	Age10
2005-1	27,375,000	35,375,000	35,662,500	35,900,000	36,697,827	37,047,827	37,327,827	38,037,827	38,377,499	38,678,749
2005-2	29,875,000	36,218,209	36,993,209	37,398,209	38,000,709	38,822,040	39,187,040	40,217,040	41,240,251	42,158,596
2005-3	122,316,665	152,087,498	152,762,498	153,099,998	153,627,498	154,082,498	154,292,498	154,632,361	155,279,938	155,729,938
2005-4	43,605,565	52,584,731	52,869,731	53,362,231	53,679,731	53,704,731	54,244,731	54,429,731	54,891,131	55,453,631
2006-1	37,653,506	49,970,687	52,271,187	54,491,187	56,650,314	59,621,036	63,991,066	66,636,933	68,501,933	71,262,213
2006-2	64,386,858	81,756,860	85,782,842	93,657,962	106,797,194	118,066,133	127,273,224	133,452,192	143,853,710	150,735,379
2006-3	56,418,926	73,228,888	77,274,315	84,826,746	96,180,634	104,459,871	108,071,838	114,125,018	119,416,141	123,184,891
2006-4	39,038,013	63,208,238	69,928,875	78,235,818	84,737,783	89,306,496	91,939,378	96,747,159	100,796,680	102,786,632
2007-1	39,194,483	54,373,002	65,142,235	73,570,903	79,536,569	85,132,687	90,546,887	94,333,898	97,004,724	100,109,049
2007-2	49,980,059	73,085,375	83,824,123	91,976,615	102,573,683	112,390,827	119,257,536	124,834,270	128,993,526	132,414,921
2007-3	47,907,543	67,464,681	78,712,373	90,307,900	100,362,615	109,720,741	113,706,994	117,742,494	120,759,794	123,968,097
2007-4	44,178,138	64,792,708	79,113,004	89,378,843	94,251,645	99,604,019	105,134,244	107,798,451	110,967,660	112,615,160
2008-1	40,643,271	54,623,595	60,875,965	66,437,583	72,116,454	77,777,639	80,335,139	82,495,245	83,952,617	84,995,074
2008-2	40,892,610	59,619,451	69,227,798	78,743,942	87,709,137	91,967,016	94,915,101	97,345,812	99,263,253	99,954,833
2008-3	43,042,664	64,630,529	73,710,444	85,147,269	91,585,561	95,751,356	98,626,451	101,872,964	103,139,055	104,090,844
2008-4	43,992,826	63,361,649	77,852,416	86,466,873	93,434,388	97,115,520	100,178,020	102,850,894	104,963,029	106,773,022
2009-1	26,657,694	43,771,573	53,048,953	63,541,399	67,364,073	70,113,607	73,117,386	73,966,922	75,174,422	77,310,562
2009-2	30,433,657	43,565,542	57,611,171	63,145,633	68,611,421	71,143,212	72,431,602	74,177,850	75,092,850	75,837,850
2009-3	22,563,481	39,535,205	51,381,062	56,675,296	61,389,793	63,092,719	64,987,162	66,782,434	67,247,434	67,922,434
2009-4	19,399,521	28,968,441	42,530,185	49,466,004	51,632,946	53,575,446	55,062,946	56,455,446	57,014,593	57,307,093
2010-1	22,033,276	39,047,886	49,677,732	54,505,670	59,557,561	61,829,942	64,044,942	65,693,692	66,325,178	66,731,428
2010-2	21,794,663	37,682,235	46,322,235	55,205,727	58,405,727	60,758,227	61,918,227	62,320,727	63,283,227	63,702,289
2010-3	39,254,043	55,520,855	67,756,469	73,595,058	76,657,558	78,455,058	79,970,058	81,510,498	81,789,931	82,934,931
2010-4	29,942,577	41,379,597	52,661,610	59,395,889	62,262,071	64,263,321	65,157,071	66,124,571	67,539,571	68,737,156
2011-1	21,660,537	33,267,886	40,920,194	46,556,546	48,881,854	50,385,921	51,763,586	52,415,657	53,822,244	54,264,744
2011-2	23,965,747	32,859,778	40,413,245	43,289,495	45,219,495	47,033,245	48,285,274	49,000,867	50,110,867	51,015,867
2011-3	18,689,708	26,865,177	35,235,564	38,093,746	39,379,337	41,745,339	42,880,339	43,715,339	44,670,339	46,181,189
2011-4	16,217,361	24,988,882	32,137,064	34,396,952	36,536,052	37,385,223	38,457,723	38,990,223	39,561,473	40,121,973
2012-1	16,975,430	28,180,219	35,463,690	42,049,707	45,509,707	46,744,707	47,854,707	48,402,207	48,949,707	49,764,707
2012-2	34,940,753	49,547,655	56,652,474	60,745,241	64,582,935	66,665,434	68,632,837	69,761,170	70,817,089	71,807,089
2012-3	23,167,468	34,108,248	42,162,973	46,480,725	48,459,853	50,827,353	51,795,757	52,675,757	54,066,423	54,683,923
2012-4	21,110,000	36,045,000	45,266,934	51,672,337	55,657,474	58,119,379	59,260,212	60,275,212	61,770,212	63,932,712
2013-1	27,144,155	40,356,476	48,992,360	54,594,659	58,035,491	59,547,989	60,785,489	62,050,489	63,896,739	65,441,739
2013-2	25,768,829	34,871,285	45,108,044	50,764,055	53,794,505	56,264,505	56,962,005	58,054,505	58,927,292	59,669,792
2013-3	15,134,164	22,265,213	29,797,824	33,761,039	37,150,477	39,174,163	41,589,412	42,865,276	44,457,411	45,222,411
2013-4	13,449,996	21,484,827	28,824,414	34,380,802	36,644,467	38,953,724	40,564,722	41,639,822	42,335,238	42,825,238
2014-1	11,230,013	19,599,250	27,915,879	31,901,736	34,229,236	35,052,986	35,852,986	36,465,918	37,057,168	38,033,418
2014-2	17,404,400	27,116,302	34,372,620	38,455,120	42,250,879	43,983,379	45,434,394	46,046,894	46,969,394	48,050,644
2014-3	14,052,500	21,043,077	27,139,528	30,305,854	32,677,981	34,554,646	35,612,146	36,369,646	36,759,179	37,246,242
2014-4	13,659,966	20,711,119	26,680,645	29,134,057	31,629,577	33,478,766	34,681,266	35,543,766	36,234,315	37,221,815
2015-1	12,524,644	20,189,003	25,241,638	30,355,129	31,825,129	33,167,629	34,585,129	35,487,629	36,092,629	37,220,127
2015-2	13,043,750	19,757,500	25,716,194	28,764,621	30,545,871	31,931,062	33,633,619	34,219,869	35,577,703	36,567,703
2015-3	12,774,540	18,457,039	23,451,330	27,636,397	29,861,184	31,033,684	32,106,684	32,651,684	33,021,684	33,734,184
2015-4	10,412,500	17,463,538	24,260,777	28,400,710	30,968,210	33,005,710	34,130,710	35,008,210	36,240,740	37,028,240
2016-1	13,225,000	19,137,498	24,776,917	29,247,279	31,647,279	33,109,779	34,913,429	37,008,429	37,855,929	38,120,929
2016-2	10,932,499	19,001,270	25,584,674	30,798,901	32,946,219	34,493,719	35,348,719	35,754,969	37,034,969	
2016-3	10,050,000	19,173,748	26,609,760	31,795,123	34,300,123	37,187,623	38,607,918	39,902,084		
2016-4	14,799,998	23,947,317	34,411,076	38,593,576	41,565,088	43,520,088	44,870,088			
2017-1	13,944,996	24,438,506	34,195,186	40,740,654	44,228,154	46,073,154				
2017-2	10,715,000	21,922,347	31,015,215	37,888,509	40,591,009					
2017-3	10,873,332	21,142,722	33,359,304	39,999,453						
2017-4	12,340,194	23,785,345	37,479,102							
2018-1	12,067,500	21,547,152								
2018-2	9,512,500									

	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11
Periods (N)	12	16	16	16	16	16	16	16	16	16
Wtd Avg	1.721	1.372	1.165	1.078	1.050	1.034	1.023	1.024	1.020	1.021
Prior Select	1.597	1.328	1.158	1.078	1.048	1.034	1.021	1.023	1.020	1.020
Selected	1.721	1.372	1.165	1.078	1.050	1.034	1.023	1.024	1.020	1.021

Part E Compensation
Cumulative Payments by Approval Quarter

Approval Quarter	Age11	Age12	Age13	Age14	Age15	Age16	Age17	Age18	Age19	Age20
2005-1	38,868,749	39,071,249	39,183,749	39,706,249	39,706,249	39,948,749	39,963,749	40,531,249	40,588,749	40,636,249
2005-2	42,874,334	43,094,334	43,344,334	43,814,334	44,591,667	44,784,167	45,223,179	45,743,179	45,953,179	46,223,179
2005-3	155,962,623	156,264,962	156,299,962	156,824,962	156,909,962	157,152,462	157,292,462	157,292,462	157,327,462	157,682,462
2005-4	55,863,631	56,268,631	56,268,631	56,268,631	56,446,131	56,548,631	56,883,631	57,126,131	57,263,631	57,263,631
2006-1	72,786,634	74,299,134	75,646,634	76,824,868	77,524,868	78,857,097	80,189,597	81,307,097	82,638,665	82,981,165
2006-2	156,528,392	161,779,757	165,443,762	169,860,272	174,090,831	179,146,632	182,810,121	186,239,324	188,748,538	192,042,125
2006-3	125,931,657	128,706,851	130,975,014	133,662,267	135,627,798	138,663,561	140,410,000	141,926,666	144,472,770	146,620,270
2006-4	104,360,118	106,177,518	108,609,433	109,789,751	113,085,848	115,089,199	116,562,813	117,935,154	119,685,154	120,988,512
2007-1	102,793,747	106,677,887	108,379,786	109,762,902	111,384,506	113,059,994	114,950,458	116,427,880	118,363,544	120,461,902
2007-2	135,840,466	138,798,272	141,775,685	144,732,237	147,727,313	149,666,772	152,179,461	154,335,470	155,807,970	156,868,082
2007-3	125,832,772	128,807,454	131,248,349	132,510,849	134,527,829	137,565,151	140,455,151	141,953,141	143,323,346	145,870,846
2007-4	114,481,824	116,408,174	118,255,627	119,732,798	120,952,734	123,488,344	125,144,006	126,327,980	127,326,952	128,789,614
2008-1	86,675,074	87,752,531	90,065,706	91,597,130	92,953,605	94,009,821	94,804,723	95,810,556	96,300,139	97,210,286
2008-2	100,665,803	102,088,302	104,163,762	105,486,529	106,324,029	107,281,529	108,351,529	109,208,892	109,823,892	110,248,892
2008-3	105,688,584	107,023,760	108,520,662	109,993,152	111,517,206	112,872,290	113,344,790	114,124,194	115,003,408	116,191,800
2008-4	108,383,022	109,585,533	110,685,346	111,797,846	113,210,346	114,230,443	115,544,868	116,108,228	116,955,728	118,012,367
2009-1	78,863,062	80,200,818	80,923,318	81,647,794	82,540,294	83,995,294	84,650,294	85,122,794	86,035,294	86,842,794
2009-2	77,404,151	78,604,891	79,568,384	80,671,497	81,271,497	81,663,997	83,097,413	84,009,364	84,439,364	85,118,227
2009-3	68,650,664	70,303,164	71,984,163	73,181,931	73,704,431	74,517,920	75,887,072	76,467,072	76,840,143	77,443,178
2009-4	58,318,595	59,168,595	60,042,006	61,137,839	62,465,330	62,822,830	63,468,042	63,978,042	64,903,042	65,385,542
2010-1	67,543,928	69,680,666	70,756,916	72,031,916	72,707,684	74,083,362	74,912,162	75,527,162	76,042,162	76,836,641
2010-2	64,381,431	65,596,431	66,228,888	67,308,888	68,395,888	68,643,388	69,243,388	70,026,903	70,611,903	71,314,403
2010-3	83,664,931	84,604,263	85,214,263	86,258,874	87,041,374	88,171,270	88,600,020	89,141,270	89,499,300	90,419,300
2010-4	69,679,656	70,712,293	71,939,793	73,273,855	73,657,347	73,944,847	74,797,347	75,734,847	76,252,347	76,774,847
2011-1	54,824,744	55,704,744	56,797,244	57,669,744	58,757,734	59,661,620	61,124,120	61,529,120	61,759,120	62,239,120
2011-2	52,155,592	53,108,092	53,575,592	54,808,092	55,430,592	55,910,592	56,745,592	57,188,092	57,973,092	59,473,092
2011-3	46,656,275	47,201,275	47,691,275	48,388,775	49,281,275	50,027,638	50,312,638	50,615,138	50,892,638	51,657,638
2011-4	40,499,473	41,459,025	42,206,525	42,874,025	43,654,960	44,024,960	44,552,186	45,283,829	46,033,829	46,443,829
2012-1	50,184,707	50,834,707	51,723,613	52,866,113	53,733,613	54,363,613	55,378,613	56,251,113	56,891,113	57,611,113
2012-2	72,617,776	74,250,276	75,847,776	77,220,276	78,417,526	79,802,526	80,506,276	81,890,917	83,129,981	84,879,981
2012-3	55,791,423	56,362,438	57,642,438	58,292,438	58,784,938	59,488,938	60,353,938	61,721,438	62,210,571	63,213,071
2012-4	64,817,712	66,812,533	67,775,033	68,806,096	70,088,426	71,332,176	72,378,426	73,510,926	74,600,926	75,633,426
2013-1	66,677,989	67,802,989	69,366,425	70,106,425	71,121,425	71,916,425	73,617,675	75,352,675	76,040,175	76,845,175
2013-2	61,602,292	62,809,652	63,819,652	65,599,652	66,762,152	67,624,652	69,084,652	70,146,255	71,746,335	72,448,835
2013-3	46,479,911	47,798,495	49,185,995	50,293,495	51,518,495	52,545,614	53,713,553	54,606,053	55,303,553	56,504,803
2013-4	44,196,488	45,042,738	46,367,699	47,031,449	48,486,448	49,141,448	49,967,516	50,792,388	51,419,888	
2014-1	39,030,918	40,373,418	41,570,034	42,692,957	43,295,457	44,287,957	44,613,957	45,738,957		
2014-2	48,690,644	50,510,644	51,730,644	52,505,644	53,958,144	54,850,644	55,290,644			
2014-3	38,043,742	38,786,242	39,543,742	40,686,242	41,367,492	42,317,492				
2014-4	38,166,815	39,031,815	39,829,315	41,309,315	42,116,815					
2015-1	38,400,127	39,730,127	41,656,879	42,711,879						
2015-2	37,065,203	38,020,203	39,165,203							
2015-3	34,681,684	36,331,684								
2015-4	37,895,740									
2016-1										
2016-2										
2016-3										
2016-4										
2017-1										
2017-2										
2017-3										
2017-4										
2018-1										
2018-2										
	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21
Periods (N)	12	12	16	16	12	16	12	16	16	16
Wtd Avg	1.027	1.025	1.020	1.018	1.015	1.014	1.017	1.011	1.013	1.011
Prior Select	1.023	1.021	1.018	1.017	1.013	1.014	1.014	1.009	1.013	1.010
Selected	1.027	1.025	1.020	1.018	1.015	1.014	1.017	1.011	1.013	1.011

Part E Compensation

Cumulative Payments by Approval Quarter

Approval Quarter	Age21	Age22	Age23	Age24	Age25	Age26	Age27	Age28	Age29	Age30
2005-1	40,758,749	41,113,749	41,143,749	41,168,749	41,226,249	41,290,736	41,393,236	41,500,736	41,535,776	41,775,776
2005-2	46,693,179	46,870,679	47,233,179	47,458,179	47,708,179	48,145,679	48,383,179	48,568,140	48,650,640	48,730,640
2005-3	157,807,462	157,894,962	158,002,462	158,112,462	158,212,462	158,359,962	158,489,962	158,539,962	158,664,962	158,664,962
2005-4	57,378,631	57,378,631	57,543,631	57,543,631	57,656,131	57,781,131	57,781,131	57,913,631	57,976,131	58,221,131
2006-1	84,026,165	84,988,665	85,908,665	86,513,665	87,361,165	87,868,665	88,396,165	88,711,165	88,997,274	89,464,774
2006-2	195,457,125	198,511,140	200,951,140	202,686,380	204,688,880	206,660,664	208,639,970	210,869,970	213,329,970	214,606,277
2006-3	147,759,023	149,200,959	150,895,109	152,078,069	152,958,069	154,088,069	155,249,567	156,687,067	157,938,687	158,988,687
2006-4	121,609,897	122,717,397	123,423,627	124,758,627	125,428,627	126,410,380	127,485,380	128,240,380	128,934,748	129,804,748
2007-1	121,296,838	123,343,986	124,645,247	126,355,145	127,971,928	129,385,506	130,801,078	131,984,331	132,647,189	133,763,680
2007-2	158,796,327	160,763,142	162,203,142	164,340,642	166,430,642	167,994,392	170,149,392	171,379,519	172,109,519	173,985,522
2007-3	147,334,413	149,499,951	150,713,411	152,363,928	153,743,864	155,237,658	156,595,296	157,616,192	158,591,774	159,914,514
2007-4	129,867,098	131,405,667	132,799,656	133,956,614	135,529,114	136,346,039	137,612,056	139,596,423	141,469,389	142,969,157
2008-1	98,024,264	98,956,764	99,695,776	100,758,276	101,345,578	102,205,578	103,173,078	103,695,578	104,587,617	105,799,342
2008-2	110,904,981	111,628,981	112,392,901	113,147,764	114,299,033	115,169,033	115,802,261	116,333,094	116,763,184	117,495,806
2008-3	117,202,919	117,962,919	118,405,419	118,762,919	119,560,419	120,372,919	121,044,136	121,984,136	122,753,351	123,609,601
2008-4	118,998,145	120,326,975	121,361,975	122,106,975	123,178,171	123,715,671	124,663,171	125,543,171	126,306,921	127,044,421
2009-1	87,392,794	87,962,794	88,412,881	89,279,859	90,266,242	91,363,742	92,268,742	92,963,799	93,343,799	93,992,549
2009-2	85,910,727	86,743,227	87,357,512	88,867,261	89,554,761	90,137,261	90,722,261	91,739,761	92,468,237	93,281,987
2009-3	78,118,808	78,861,308	79,614,946	81,237,446	81,514,946	82,527,029	83,022,029	84,327,029	85,277,029	86,612,404
2009-4	65,893,042	67,489,284	68,196,784	68,641,550	69,476,550	70,010,300	71,215,602	71,858,102	72,488,102	73,309,446
2010-1	77,550,391	78,375,326	79,529,222	80,316,722	81,101,112	81,698,370	82,668,105	82,947,821	83,452,821	84,233,962
2010-2	71,804,173	73,181,186	74,181,199	74,666,199	75,342,739	75,742,739	76,077,739	76,697,739	77,518,882	78,011,439
2010-3	91,318,442	92,037,192	93,132,192	93,571,089	94,103,589	95,178,339	96,155,839	97,168,081	98,265,581	99,053,081
2010-4	77,942,466	78,709,549	79,847,453	80,870,358	82,147,858	83,250,358	83,989,049	84,819,049	85,606,549	86,156,549
2011-1	62,799,120	63,396,620	64,344,202	65,404,202	66,074,202	66,796,881	67,476,881	68,004,381	68,687,139	69,379,658
2011-2	60,043,092	60,465,592	61,375,592	62,243,092	63,160,868	64,073,368	64,568,368	65,542,592	66,182,592	
2011-3	51,922,638	53,122,638	54,342,765	54,973,542	55,403,542	56,021,042	56,278,542	56,871,042		
2011-4	47,261,329	48,031,329	48,583,829	48,856,329	49,411,329	49,653,829	50,358,829			
2012-1	58,603,613	59,218,613	60,200,779	60,825,779	61,465,779	62,273,279				
2012-2	85,499,981	85,842,481	87,553,731	87,871,231	88,871,231					
2012-3	63,943,071	64,325,571	64,917,694	65,762,694						
2012-4	76,413,426	77,639,205	78,474,205							
2013-1	77,700,175	78,972,293								
2013-2	74,178,685									
2013-3										
2013-4										
2014-1										
2014-2										
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2017-1										
2017-2										
2017-3										
2017-4										
2018-1										
2018-2										
	21 to 22	22 to 23	23 to 24	24 to 25	25 to 26	26 to 27	27 to 28	28 to 29	29 to 30	30 to 31
Periods (N)	16	14	16	16	16	16	16	16	16	16
Wtd Avg	1.012	1.014	1.010	1.010	1.009	1.009	1.009	1.008	1.009	1.007
Prior Select	1.013	1.012	1.011	1.009	1.009	1.008	1.009	1.008	1.009	1.006
Selected	1.012	1.014	1.010	1.010	1.009	1.009	1.009	1.008	1.009	1.007

Part E Compensation

Cumulative Payments by Approval Quarter

Approval Quarter	Age31	Age32	Age33	Age34	Age35	Age36	Age37	Age38	Age39	Age40
2005-1	41,853,276	41,928,276	41,945,776	41,945,776	41,983,276	42,028,276	42,028,276	42,028,276	42,110,776	42,110,776
2005-2	48,893,140	48,993,140	49,250,640	49,378,140	49,665,670	49,673,170	49,705,670	49,735,670	49,740,670	49,740,670
2005-3	158,874,962	158,899,962	158,899,962	158,899,962	158,899,962	158,909,962	158,984,806	159,034,806	159,112,306	159,279,806
2005-4	58,221,131	58,363,631	58,363,631	58,363,631	58,488,631	58,528,631	58,628,631	58,676,131	58,676,131	58,736,131
2006-1	90,032,274	90,319,774	90,874,149	91,488,569	91,863,619	92,678,619	93,381,119	93,966,119	94,468,498	95,210,998
2006-2	216,713,777	218,849,872	220,666,912	222,706,897	225,001,897	226,756,479	229,817,656	231,792,385	233,702,385	235,969,885
2006-3	159,850,618	160,900,553	162,055,978	163,137,560	164,160,060	165,827,560	166,650,060	167,775,418	169,187,126	169,849,626
2006-4	130,734,748	131,419,748	132,552,248	133,459,034	134,466,534	135,438,306	136,385,251	137,319,851	138,219,851	138,894,851
2007-1	134,286,180	135,031,180	135,582,456	136,679,067	137,523,185	139,560,808	140,226,253	141,438,671	142,552,421	143,666,894
2007-2	175,560,522	176,943,022	178,473,022	180,176,945	182,495,382	184,495,382	186,298,216	187,348,632	189,221,048	190,947,169
2007-3	161,661,855	163,365,129	164,585,129	165,792,650	167,557,650	168,850,543	171,543,043	173,596,358	175,125,648	176,628,148
2007-4	143,596,657	144,416,066	145,833,424	146,560,924	148,073,424	149,818,424	150,744,147	152,255,397	153,722,897	154,602,738
2008-1	106,191,842	107,067,674	107,845,174	109,037,626	109,832,626	110,712,376	111,852,376	113,073,410	114,103,410	114,880,910
2008-2	117,841,010	118,799,124	120,104,124	121,376,624	122,161,624	123,044,124	123,665,588	124,655,846	125,333,346	126,171,880
2008-3	124,426,684	124,926,684	126,384,184	127,303,767	127,818,767	128,505,834	129,452,943	130,382,459	131,055,246	132,240,146
2008-4	127,834,015	128,626,515	130,031,515	130,953,242	131,486,992	132,379,492	132,725,947	133,548,447	134,564,332	
2009-1	94,480,338	95,034,114	95,575,653	96,825,132	97,960,132	98,662,632	99,667,632	100,137,577		
2009-2	93,781,991	94,666,991	95,581,615	96,016,615	96,999,115	97,514,115	98,264,115			
2009-3	87,147,404	87,525,236	88,596,060	89,459,382	90,146,882	91,081,882				
2009-4	73,967,996	74,380,496	75,158,560	75,918,560	77,308,560					
2010-1	85,232,537	85,696,844	86,766,965	87,457,490						
2010-2	79,424,578	79,844,578	80,425,453							
2010-3	99,158,081	99,950,581								
2010-4	86,721,549									
2011-1										
2011-2										
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2017-2										
2017-3										
2017-4										
2018-1										
2018-2										
	31 to 32	32 to 33	33 to 34	34 to 35	35 to 36	36 to 37	37 to 38	38 to 39	39 to 40	40 to 41
Periods (N)	16	16	16	16	16	16	16	16	15	12
Wtd Avg	1.007	1.009	1.008	1.009	1.009	1.008	1.007	1.007	1.006	1.007
Prior Select	1.007	1.009	1.008	1.008	1.009	1.008	1.007	1.007	1.006	1.007
Selected	1.007	1.009	1.008	1.009	1.009	1.008	1.007	1.007	1.006	1.007

Part E Compensation
 Cumulative Payments by Approval Quarter

Approval Quarter	Age41	Age42	Age43	Age44	Age45	Age46	Age47	Age48	Age49	Age50	Age51	Age52	Age53	Age54
2005-1	42,110,776	42,110,776	42,110,776	42,110,776	42,143,276	42,233,276	42,233,276	42,233,276	42,233,276	42,233,276	42,293,276	42,293,276	42,293,276	42,358,276
2005-2	49,885,670	49,945,670	50,105,670	50,118,170	50,238,170	50,290,670	50,370,670	50,410,670	50,623,170	50,820,670	50,903,170	50,953,170	50,968,170	
2005-3	159,279,806	159,292,306	159,292,306	159,407,306	159,462,306	159,492,306	159,734,806	159,734,806	159,734,806	159,812,306	159,824,326	159,824,326		
2005-4	58,736,131	58,878,631	58,883,631	58,958,631	58,958,631	59,083,631	59,083,631	59,313,631	59,373,631	59,373,631	59,541,131			
2006-1	95,815,998	96,435,998	97,155,998	97,698,498	98,306,798	98,841,798	99,256,798	99,949,298	100,281,798	101,100,130				
2006-2	238,288,950	240,098,950	242,631,450	245,401,450	248,036,450	250,068,950	252,148,950	254,739,270	256,489,270					
2006-3	171,150,251	171,897,470	173,727,033	174,948,329	175,913,329	177,169,646	178,359,646	180,049,646						
2006-4	140,137,506	140,990,006	141,688,131	141,920,631	142,913,131	144,333,103	145,345,603							
2007-1	145,143,576	146,487,997	147,742,716	149,623,600	150,541,100	151,750,950								
2007-2	192,929,711	194,761,753	196,921,606	198,748,272	199,534,522									
2007-3	177,872,872	178,931,635	180,599,135	182,024,135										
2007-4	155,566,488	156,715,187	157,869,718											
2008-1	115,448,410	116,098,410												
2008-2	127,218,719													
2008-3														
2008-4														
2009-1														
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2017-4														
2018-1														
2018-2														
	41 to 42	42 to 43	43 to 44	44 to 45	45 to 46	46 to 47	47 to 48	48 to 49	49 to 50	50 to 51	51 to 52	52 to 53	53 to 54	54 to Ult
Periods (N)	12	12	11	10	9	8	7	6	5	4	3	2	1	0
Wtd Avg	1.006	1.007	1.007	1.005	1.006	1.005	1.006	1.004	1.003	1.001	1.000	1.000	1.002	1.013
Prior Select	1.005	1.006	1.006	1.005	1.002	1.001	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.070
Selected	1.006	1.007	1.007	1.005	1.006	1.005	1.006	1.004	1.003	1.001	1.000	1.000	1.002	1.050

Part E Compensation
Summary of Results: Counts

	Current Reported	Reported LDF	Reported BF	Selected
2005-1	326	329	330	330
2005-2	391	395	398	398
2005-3	1,226	1,239	1,234	1,234
2005-4	453	458	462	462
2006-1	778	787	791	791
2006-2	1,970	1,996	1,988	1,988
2006-3	1,363	1,382	1,384	1,384
2006-4	1,105	1,123	1,124	1,124
2007-1	1,148	1,168	1,170	1,170
2007-2	1,495	1,523	1,520	1,520
2007-3	1,336	1,363	1,363	1,363
2007-4	1,195	1,222	1,221	1,221
2008-1	906	929	932	932
2008-2	996	1,023	1,023	1,023
2008-3	1,032	1,063	1,062	1,062
2008-4	1,031	1,064	1,061	1,061
2009-1	761	788	791	791
2009-2	769	798	797	797
2009-3	694	721	721	721
2009-4	587	612	614	614
2010-1	676	706	704	704
2010-2	617	646	650	650
2010-3	823	864	859	859
2010-4	685	721	721	721
2011-1	549	579	581	581
2011-2	504	533	533	533
2011-3	459	486	486	486
2011-4	415	441	444	444
2012-1	506	540	543	543
2012-2	730	781	772	772
2012-3	550	590	597	597
2012-4	643	692	691	691
2013-1	664	718	716	716
2013-2	624	678	676	676
2013-3	507	553	555	555
2013-4	452	496	496	496
2014-1	395	435	441	441
2014-2	493	547	539	539
2014-3	373	416	420	420
2014-4	360	405	405	405
2015-1	357	404	403	403
2015-2	323	370	371	371
2015-3	312	361	362	362
2015-4	334	390	389	389
2016-1	335	395	395	395
2016-2	334	400	401	401
2016-3	351	428	431	431
2016-4	410	508	503	503
2017-1	401	509	508	508
2017-2	375	497	498	498
2017-3	342	495	502	502
2017-4	319	563	538	539
2018-1	168	459	459	459
2018-2	69	357	398	396
Total	<u>35,017</u>	<u>37,946</u>	<u>37,973</u>	<u>37,972</u>

Appendix 4: Undiscounted Liability Estimates

As of 9/30/2018, the **undiscounted** liability for future EEOICPA benefit payments is projected at \$35.9 billion. The future medical payments are projected at \$27.7 billion, and the future compensation payments are projected at \$8.2 billion, on an undiscounted basis.

ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2018

SUMMARY OF LIABILITY FOR FUTURE PAYMENTS (\$ Millions)

	Undiscounted Estimate as of <u>9/30/2018</u>
Compensation: Part B	\$ 3,242
Compensation: Part E	<u>4,978</u>
Compensation: Total	8,220
Medical Payments	27,706
Total Future Payments	\$ 35,926

**ESTIMATED LIABILITY FOR EEOICPA
AS OF SEPTEMBER 30, 2018**

SUMMARY OF UNDISCOUNTED EEOICPA PAYMENTS BY YEAR

Fiscal Year	Compensation Part B Undiscounted Payments	Compensation Part E Undiscounted Payments	Compensation DOJ RECA Undiscounted Payments	Compensation Total Undiscounted Payments	Medical Total Undiscounted Payments	Total Undiscounted Payments
(1)	(2)	(3)	(4)	(4)	(5)	(6)
2019	\$ 248,860,146	\$ 342,793,266	\$ 10,854,465	\$ 602,507,878	\$ 799,426,224	\$ 1,401,934,102
2020	230,671,607	323,169,440	9,013,470	562,854,517	842,055,299	1,404,909,816
2021	213,884,505	304,505,666	7,484,721	525,874,893	863,934,408	1,389,809,301
2022	198,380,373	287,678,292	6,215,259	492,273,924	878,708,786	1,370,982,710
2023	184,052,270	271,613,708	5,161,107	460,827,085	885,965,717	1,346,792,802
2024	170,803,460	256,404,865	4,285,746	431,494,071	899,190,322	1,330,684,392
2025	158,546,255	241,231,206	3,558,853	403,336,315	906,884,125	1,310,220,440
2026	147,201,024	227,169,858	2,955,246	377,326,128	909,458,291	1,286,784,419
2027	136,695,315	215,840,376	2,454,015	354,989,706	907,381,471	1,262,371,177
2028	126,963,104	205,300,051	2,037,797	334,300,951	901,170,547	1,235,471,498
2029	117,944,124	194,429,655	1,692,172	314,065,950	891,361,117	1,205,427,068
2030	109,583,286	181,977,073	1,405,167	292,965,527	878,466,630	1,171,432,157
2031	101,830,165	167,799,740	1,166,841	270,796,746	862,965,180	1,133,761,926
2032	94,638,542	154,004,553	968,936	249,612,032	845,293,416	1,094,905,448
2033	87,966,010	141,746,651	804,598	230,517,258	825,841,307	1,056,358,565
2034	81,773,611	130,882,421	668,132	213,324,164	804,947,420	1,018,271,584
2035	76,025,523	121,023,584	554,812	197,603,919	782,904,235	980,508,154
2036	70,688,778	112,090,120	460,712	183,239,610	759,970,458	943,210,068
2037	65,733,004	103,667,574	382,572	169,783,150	736,381,609	906,164,759
2038	61,130,202	95,558,956	317,685	157,006,843	712,355,029	869,361,873
2039	56,854,544	88,534,776	263,803	145,653,123	688,091,332	833,744,456
2040	52,882,182	82,265,487	219,061	135,366,729	663,774,091	799,140,820
2041	49,017,582	76,378,266	181,906	125,577,754	639,564,616	765,142,370
2042	45,609,890	70,604,882	151,054	116,365,826	615,609,987	731,975,814
2043	42,441,366	65,191,501	125,434	107,758,301	592,042,104	699,800,405
After 2043 ⁶	248,436,428	515,791,049	322,118	764,549,595	7,612,277,327	8,376,826,922
Total Future	3,178,613,295	4,977,653,017	63,705,682	8,219,971,995	27,706,021,049	35,925,993,044

⁶ Reflects projected cash flow through 2078