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TO: The Honorable Trinidad Navarro
Delaware Insurance Commissioner

FROM: John R. Pedrick, FCAS, MAAA
Vice President – Actuarial Services

DATE: August 4, 2017

RE: DCRB Filing No. 1701
Workers Compensation Residual Market Rate and Voluntary Market Loss Cost Filing
Proposed Effective December 1, 2017 (Selected Portions Effective June 1, 2018)

This actuarial memorandum provides a discussion of the analysis performed by the Delaware Compensation Rating Bureau, Inc. (DCRB) that results in proposed changes in Residual Market Rates, Voluntary Market Loss Costs, rating values and supplementary rate information for Workers Compensation insurance in Delaware.

SUMMARY OF THE PROPOSAL IN THIS FILING

This filing proposes an overall change in Residual Market Rates and Voluntary Market Loss Costs. The changes vary by class. Associated rating values will also be revised.

Indicated and Proposed Changes	
Residual Market Rates	Voluntary Market Loss Costs
-4.91%	-2.15%

The actuarial methodology in the filing has not changed from the prior annual filing, No. 1603. However, adjustments for changes in law have been revised. In this filing, the underlying losses are adjusted to reflect Delaware law after House Bill 175 of 2013 (HB175) and prior to House Bill 373 of 2014 (HB373) (a “post-HB175” basis). As a result, an explicit factor is used to adjust the final calculations to a post HB373 law level that will be in effect for policies written from December 1, 2017 through November 30, 2018. These are discussed further in the Technical Discussion and Supporting Information section of this memorandum.

There is not yet sufficient data to accurately estimate the true impact of HB373. As a result, the full impact of HB373 contemplated in the law is reflected in this filing. When sufficient data becomes available, the DCRB will estimate its impact. The DCRB reserves the right to file any changes indicated by such an analysis. Without the assumption that the full savings contemplated in HB373 will be fully realized, the indicated changes would be higher, as shown below.

Indicated Changes Based on Portion of HB373 Savings That May Emerge	Residual Market Rates	Voluntary Market Loss Costs
HB373 Savings Fully Realized	-4.91%	-2.15%
75% of HB373 Savings Realized	+1.62%	+4.57%
50% of HB373 Savings Realized	+8.15%	+11.29%

The DCRB supports and commends the Delaware Workers' Compensation Oversight Panel (WCOP) and its work to implement changes meant to achieve the savings contemplated in HB373, as well as its work to identify problems in the Delaware system and recommend solutions.

The supporting exhibits and other attachments accompanying this actuarial memorandum comprise the balance of the filing and provide pertinent information regarding the proposed residual market rates, voluntary market loss costs, rating values, supplementary rate information and supporting information for this filing. An index of exhibits appears at the end of this memorandum.

DISCUSSION OF THIS FILING'S METHODS, ANALYSIS AND FINDINGS

The proposed residual market rates, voluntary market loss costs and minimum premiums by classification submitted in this filing reflect DCRB's actuarial analysis of all available experience data, enacted legislation and other relevant factors to establish appropriate and lawful rating values for the policy period beginning December 1, 2017.

Delaware Workers Compensation Insurance Plan (Plan) - Residual Market Rates

Delaware law requires that a "residual market plan" be filed with the Insurance Commissioner by the advisory organization. Residual market coverage is provided under the auspices of the Delaware Workers Compensation Insurance Plan (Plan). Employers unable to obtain workers compensation insurance in the voluntary market may apply to the Plan. An insurance carrier is then assigned to administer coverage for that employer, either as a servicing carrier on behalf of the Plan or on a direct assignment basis.

Historically, rates for the Plan have been promulgated based on statewide experience. The loss ratio (the ratio of losses to premium) for the Plan has historically been significantly higher than the loss ratio for the voluntary market. As shown in Exhibit 19, the loss ratio for the Plan, based on five years of experience, is 88% higher than the loss ratio for the voluntary market. As a result of this historical imbalance, employers insured in the Plan are subject to a surcharge. Since August 1, 1997, those employers insured in the Plan, which are eligible for experience rating and produce an experience modification greater than 1.000 in accordance with the approved Experience Rating Plan, have been subject to a surcharge program. This surcharge program is intended to provide incentives for employers to improve their workers compensation loss experience and/or to secure workers compensation coverage from the voluntary market. In this filing, as in filings since the inception of the surcharge program, the expected amounts of the Plan surcharges are accounted for in the form of offsets to voluntary market loss costs. The average change in collectible rate level for the residual market prior to the effect of Plan surcharges proposed in this filing is a decrease of 4.91%.

The components of the proposed overall change in residual market rates are shown below in descending order of their impact on the filing indication.

Components of Indicated Change in Residual Market Rates		
	Component	**Impact on Indication**
1	House Bill 373	-21.54%
2	Expenses other than LAE and Loss-Based Assessments	-4.50%
3	Limited Indemnity Trend	-2.26%
4	July 1, 2018 Benefit Change	-0.52%
5	Limited Indemnity Loss	-0.35%
6	Indemnity Excess Loss	+0.70%
7	Loss-Based Assessments	+0.75%
8	Limited Medical Trend	+1.07%
9	Loss Adjustment Expense	+4.20%
10	Medical Excess Loss	+6.25%
11	Limited Medical Loss	+15.39%
	Overall Indicated Change	-4.91%
Note that the total results from converting the percentages to factors (e.g., -21.54% is 0.7846 in factor form) and calculating the product of all 11 factors.		

These components can be summarized into broader categories:

Category	**Impact on Indication**
Legislation (1)	-21.54%
Other Expense and Loss-Based Assessments (2, 7)	-3.78%
Indemnity Loss (3, 5, 6)	-1.92%
July 1, 2018 Benefit Change (4)	-0.52%
Loss Adjustment Expense (9)	+4.20%
Medical Loss (8, 10, 11)	+23.90%
Overall Indicated Change	-4.91%

Voluntary Market Loss Costs

Since the enactment of House Bill 241 in 1993, Delaware law has applied a "loss cost" approach to pricing of workers compensation insurance written in the voluntary market. Under this system, the advisory organization (i.e., the DCRB) filings are limited to prospective loss costs, which reflect loss and loss adjustment expense, as well as policy forms, uniform classification and experience rating plans and rules, and supporting information. Advisory organization filings specifically exclude provisions for profit and expenses, other than loss adjustment expenses and loss-based assessments. Provisions for profit and expenses, other than loss adjustment expenses and loss-based assessments, are incorporated into voluntary market workers compensation rates by virtue of competitive filings made by each insurer. Insurer expense filings may adopt loss costs filed by the advisory organization or the rates and supplementary information filed by another insurer, by reference, with or without deviation.

Consistent with past practice, in this filing the DCRB has derived indicated changes in voluntary market loss costs directly from the proposed residual market rate change discussed above. This derivation is accomplished by removing from those rate proposals the combined effects of all provisions for profit and expenses, other than loss adjustment expenses and loss-based assessments. As a result, like the proposed changes in Plan rates, these proposed revisions in overall voluntary market loss costs are based on statewide experience.

The relationship between collectible residual market rates and voluntary market loss costs is based on a loss cost multiplier (LCM) derived from industry underwriting expenses (Exhibit 11), including the profit provision from the internal rate of return analysis (Exhibit 9). Under Delaware law, loss adjustment expenses and loss-based assessments are included in the loss costs filed by the DCRB. The LCM is the reciprocal of the ratio of loss, loss adjustment expense and loss-based assessments to premium. In last year's filing, No. 1603, the proposed LCM was 1.4288 (= 1 ÷ 0.6999). The proposed changes of +3.18% for residual market rates and +1.68% for voluntary market loss costs in Filing No. 1603 differed due to revisions in industry underwriting expenses and profit. However, due to the compromise with the Department of Insurance in which both markets received a 0.0% overall change, no change in the underlying LCM was reflected. The compromise kept the LCM at the previous year's level, 1.4081 (= 1 ÷ 0.7102).

The loss cost multiplier in this filing, No. 1701, is 1.3684 (= 1 ÷ 0.7308). Exhibit 12, page 12.1, line (10), reflects this modification to the DCRB's standard calculations. The table below provides the details.

Delaware Loss, Loss Adjustment Expense, Underwriting Expense and Profit		
Item	**Current Provision As a Percent of Premium**	**Proposed Provision As a Percent of Premium**
Loss	56.50	58.38
Loss Adjustment Expense	11.59	12.18
Commission	5.56	5.38
Other Acquisition	2.56	2.39
General Expenses	3.63	3.26
Premium Discount	8.62	8.38
State Premium Tax	2.00	2.00
Other State Taxes	0.32	0.33
Uncollectible Premium	1.32	1.10
Administrative Assessment*	1.90	2.52
Workers Compensation Fund	2.00	3.00
Underwriting Profit	4.00	1.08
12/1/2016 Compromise Adjustment	1.03	n/a
Loss, LAE, Administrative Assessment*, and 12/1/2016 Compromise Adjustment	71.02	73.08
* Denotes loss-based assessment		

Using the proposed provision for loss, loss adjustment expense and loss-based assessments (the provision for loss costs), the indicated change in voluntary market loss costs is -2.15%, which is computed as follows:

$$0.9509 \times 0.7308 / 0.7102 = 0.9785$$

The proposed decrease in voluntary market loss costs is attributable to the same factors as those that impact residual market rates, except that the effects of expense provisions, other than loss adjustment expense and loss-based assessments, do not apply to loss costs.

It is important to note that the net effect of the proposed loss costs on ultimate prices for employers that will be insured in the voluntary market (the majority of all insured risks) may differ significantly from employer to employer and from insurer to insurer. Workers compensation insurance prices for these employers will be a function of individual carrier decisions. Each carrier may elect to use the DCRB's loss costs by reference, to deviate from those loss costs, to file independent loss costs, or to use loss costs filed by another insurer by reference. In addition, employers may obtain their future workers compensation insurance from a different insurance carrier than the carrier providing their current policy, further expanding the range of possible price changes that individual risks may experience. These variables in the determination of the ultimate price impact of the DCRB's filing are natural consequences of the competitive pricing system implemented in Delaware.

Residual Market Surcharge, Exhibit 19

Experience of employers insured under the Plan in Delaware has historically presented an aggregate loss ratio higher than that of employers insured in the voluntary market. As mentioned earlier, the loss ratio of Plan accounts was higher than that of voluntary business by more than 88% in the period 2010–2014.

During the late 1980s and early 1990s, Delaware had seen persistent increases in the portion of the market insured in the Plan. In previous response to these concerns the DCRB filed, and the Insurance Commissioner approved, a Plan surcharge program in 1997 that incorporated the following features:

- Surcharges are limited to risks eligible for experience rating and only apply to risks with debit experience modifications (i.e., those employers with demonstrably higher than average experience).
- To avoid redundant or inequitable penalties, surcharges are applied only to the extent that each employer is not fully credible in the Experience Rating Plan. This procedure assesses larger proportional surcharges to small employers, who are largely protected from the effects of their own experience in the Experience Rating Plan, but reduces surcharges applicable to larger employers whose premiums significantly respond to their own loss records.
- Surcharges are limited to the debit portion of each risk's experience modification. This limitation provides a smooth transition from non-rated to experience-rated risks and/or from small experience rating credits to small experience rating debits.

The surcharge expressed as a factor to be applied to standard premium is computed using the following formula:

0.50 x (1.000 - risk credibility in the Experience Rating Plan)

As noted above, Plan loss ratios continue to be higher than those of the voluntary market. Since 2005, the portion of the Delaware workers compensation market insured under the Plan declined from a high of approximately 20% to a low of about 5% in 2010. For this filing, the Plan market share is estimated at 7.38%. This estimate is based on the most recent available policy year, 2016.

This filing retains the Plan surcharge program as a disincentive for employers to have their Delaware workers compensation insurance coverage placed in the Plan.

The DCRB estimates that the surcharge program will produce an average surcharge for subject risks of approximately 21.7% of premium. Recognizing that some employers insured in the Plan do not qualify for experience rating and that other employers insured in the Plan qualify for experience rating but produce credit modifications, the surcharges produced by the proposed procedure would represent approximately 9.2% of total Plan premium.

The full amount of this surcharge premium is recognized in the calculation of proposed voluntary market loss costs for this filing. This approach allows a reduction of manual loss costs by approximately 1% and essentially produces three different benchmark loss cost levels underlying workers compensation insurance rates in Delaware. These different underlying loss cost levels are as defined below:

1. Plan risks subject to surcharges (highest level depending on individual risk experience)

2. Plan risks not subject to surcharges (based on statewide average experience)
3. Voluntary market risks (based on statewide average experience reduced by offset for surcharges applied to first group above)

The DCRB believes that while the Plan surcharge approach does not fully address the loss ratio difference between the residual and voluntary markets, it is practical and represents a reasonable step toward reducing Plan subsidies and providing meaningful disincentives for placement of employers in the Plan.

Delaware Construction Classification Premium Adjustment Program (DCCPAP), Exhibit 14

This filing proposes to update the reference to calendar quarter(s) used as the basis for determining qualifying wages for the DCCPAP and update the table of qualifying wages underpinning that program consistent with recent changes in the Statewide Average Weekly wage in Delaware.

Other Filing Provisions

In addition to proposed residual market rates, voluntary market loss costs and residual market surcharges, this filing addresses a number of rating values, programs, rules and procedures which are integral parts of the Delaware workers compensation insurance system. In general, the filing's proposals simply reflect parametric changes in various rating values consistent with the most recent available Delaware experience. Detailed information supporting each of these proposals is provided elsewhere in this filing. Here is a brief synopsis of these other changes:

Item	Filing Exhibit(s)	Proposed Change	Purpose
DCCPAP Program – Effective June 1, 2018	14	Revise manual rating value offsets & wage table	Maintain revenue balance of the program
Minimum Premium (residual market)	11, 27	Update parameters	Update for wage inflation
Excess Loss Factors	17b, 17c	Update ELFs	Maintain accuracy of rating values based on current data
Excess Loss Premium Factors	17d, 17e	Update ELPFs	Maintain accuracy of rating values based on current data
State and Hazard Group Relativities	18	Update Rating Values	Maintain accuracy of rating values based on current data
Experience Rating Plan	13, 20, 21, 27	Update Rating Values	Maintain accuracy of rating values based on current data
Small Deductible Program	16	Revise existing premium credit and loss elimination ratio schedules	Maintain accuracy of rating values based on current data
Workplace Safety Program	29	Revise manual rating value offsets	Maintain revenue balance in the program
Merit Rating Plan	29	Revise manual rating value offsets	Maintain revenue balance in the program
Retrospective Rating Plan	24, 25	Revise optional development factors and tax multiplier	Maintain accuracy of rating values based on current data

TECHNICAL DISCUSSION AND SUPPORTING INFORMATION

Attached to this filing are exhibits and materials that provide technical support for each of the proposals. In addition to the discussion that follows, each exhibit begins with one or more pages of discussion and technical details for the calculations that it contains. In order to highlight some of the more important aspects of the DCRB's technical analysis, the following discussion will address each of the following topics:

- Treatment of legislative and regulatory changes
- Effects of large losses on the experience analysis
- Estimation of policy year ultimate loss and loss adjustment expense ratios
- Trend provisions: Frequency, Severity
- Determination of the permissible loss ratio for proposed residual market rates
- Considerations regarding the Experience Rating Plan

Unless otherwise stated, the discussion and exhibits use experience from financial data collected by the DCRB in its annual financial data calls. These are the major topics underlying the proposed changes in residual market rates and voluntary market loss costs.

Treatment of Legislative and Regulatory Changes

Four major legislative changes over the last decade have impacted medical expenditures in Delaware: Senate Bill 1 of the 144th General Assembly (SB1), Senate Bill 238 of the 146th General Assembly (SB238), House Bill 175 of the 147th General Assembly (HB175) and House Bill 373 of the 147th General Assembly (HB373). A fifth piece of legislation, House Bill 166 of the 148th General Assembly (HB166), supplemented changes in these other bills. The DCRB does not anticipate any impact on medical expenditures from HB166.

In Filing No. 1603, effective December 1, 2016, all losses underlying the calculations were adjusted to a pre-SB1 basis. This allowed the use of four explicit factors, one for each law, to adjust the final calculations to the laws that would be in effect for policies written in the period December 1, 2016 through November 30, 2017, i.e., post-HB373 (the last of three annual fee schedule changes under HB373 was effective January 31, 2017).

The adjustment of losses to a common baseline in Delaware law allows the analysis of the underlying loss development and loss trend on a basis that is neutral to changes in law.

In this filing, losses are adjusted to a post-HB175, pre-HB373 basis (a "post-HB175" basis). That is, the underlying losses are adjusted to reflect Delaware law after HB175 and prior to HB373. As a result, an explicit factor is used to adjust the final calculations to the law level that will be in effect for policies written from December 1, 2017 through November 30, 2018, i.e., post-HB373. The calculations underlying the adjustment of unlimited losses to a post-HB175 basis are in Exhibit 1 – Unlimited Losses.

The estimated impacts of each of these four laws were provided in previous DCRB filings.

The impact of HB373, as quantified in this filing, is based on the assumption that its provisions will be fully implemented and eventually realized in the medical costs for workers compensation claims in Delaware. The details of DCRB's analysis are contained in Exhibit 35, which has been

updated since the previous filing. It is premature to pass judgment on the effectiveness of this legislation toward its ultimate goal of a 33% reduction in medical expenditures. The financial data used in this filing was valued as of December 31, 2016. At that time, the second of three changes in fee schedules had been in place for 11 months. The third and final change was implemented on January 31, 2017. There is not yet sufficient data to analyze the true impact of HB373. The DCRB expects to analyze the impact of HB373 when a full year of data following the last fee schedule change is available. In this filing, the DCRB used the projected impact of the legislated changes under the assumption that they will be fully implemented, estimated to be a 31.41% reduction in projected ultimate medical loss.

Additional details regarding legislative changes can be found in the Appendix at the end of this memorandum.

Effects of Large Losses on the Experience Analysis, Exhibit 1a

The analysis of residual market rates and voluntary market loss costs performed by the DCRB includes methods to reduce the impact of a small number of large claims in a given year. Starting with its annual experience filings effective December 1, 2004, the DCRB has applied procedures that perform loss development and trend analyses on a "limited" basis and then account for the expectation that claims exceeding the selected limit would occur from time to time by adding an excess loss factor to the rate level analysis. This filing has again approached loss development and trend analysis on a limited loss basis.

Loss amounts are stated on a post-HB175 basis. Loss development and trend analyses are conducted using losses at the post-HB175 level. The loss limit was adjusted to be stated on a post-HB373 basis (reflecting benefit levels and system provisions expected to be attained when the successive changes to Delaware's medical fee schedule are completed on January 31, 2017).

The methods and steps regarding loss limits and trend are outlined briefly below:

1. The December 1, 2004 loss limit ($1,288,146 on a post-HB175 basis) and the associated excess loss factor (0.0757) were taken as a key reference point for determination of appropriate loss limitations for this filing.
2. Approved excess loss factor tables prior to December 1, 2004 were used to establish loss limitations consistent with an excess loss factor of 0.0757.
3. An annual trend rate was computed for the series of loss limits established in step 2 above.
4. Loss limits were interpolated for each policy period prior to December 1, 2004 based on the trend in loss limits through December 1, 2004.
5. Loss limitations consistent with an excess loss factor of 0.0757 for filings through December 1, 2016 were used to derive a post-2004 annual trend rate.
6. Loss limits were projected for each policy period subsequent to December 1, 2004 based on the trend in loss limits through December 1, 2016.
7. A series of loss limitations was selected for previous policy years consistent with the trend through December 1, 2004, applied retrospectively from that date and consistent

with the trend from December 1, 2004 through December 1, 2016, applied prospectively from December 1, 2004, such that losses were capped at successively lower levels for older policy years, recognizing the impacts of wage and price inflation and potential changes in utilization over time. For policy years prior to 1984, a constant loss limitation of $339,727 was applied.

8. Reported paid and case incurred losses were adjusted as needed to limit underlying loss data to the selected limitations by policy year. These can be found in Exhibit 1 – Limited Losses.
9. Loss development analysis was performed using the limited loss data produced above.
10. Trend analysis was accomplished by dividing the observed limited loss ratios into separate components for claim frequency and claim severity, and prospective trends were selected for each component.
11. A loss limitation was selected for the prospective rating period based on the post-2004 projections. This selection was $2,744,000 on a post-HB175 basis (reflecting benefit levels and system provisions in effect immediately after the implementation of Delaware's medical fee schedule on or about September 1, 2008). This loss limitation was then adjusted to a basis reflecting the effect of HB373, which resulted in a loss limitation of $1,930,710.
12. The portion of losses that the selected loss limitations would be expected to remove from Delaware experience was determined.
13. Trended limited loss ratios were adjusted to an unlimited basis by application of an excess loss factor, from which point the rate level analysis could proceed in the usual fashion.

Estimation of Policy Year Ultimate Loss and Loss Adjustment Expense Ratios, Exhibit 2 – Limited Losses

Much of the analytical effort required in workers compensation insurance ratemaking is devoted to the evaluation of loss experience from prior periods of time. Results of past experience form a vitally important base of information when developing the prospective estimates in this filing. Since workers compensation losses may be paid out over an extended period of time after the an accident occurs and a claim is filed, results of recent periods of experience must be estimated before ratemaking analysis based on those prior periods of time may proceed.

The DCRB has considered the matter of estimating ultimate policy year loss and loss adjustment expense ratios at length in the preparation of this filing. In evaluating results of the methods in this filing, information gleaned from the DCRB's Unit Statistical Plan data was also taken into account.

In the estimation of ultimate policy year loss ratios for indemnity and medical benefits, the paid loss development method generally gave higher results than the case incurred loss development method. Differences between these approaches varied from policy year to policy year but tended to be larger for some of the most recent policy years.

The DCRB customarily uses a four-year average of age-to-age development factors in its estimation of ultimate loss and loss adjustment expense ratios. In maintaining this process for

successive filings, a new year of development experience is added for each filing while a year of development four years prior to the most recent available year is removed from the filing analysis. As a result, three of the same years of development experience are used in any pair of successive filings. The difference in loss development between the respective years being added and dropped influences whether ultimate loss estimates will tend to increase or decrease between successive filing analyses. For this filing the latest available year of development experience available for this filing is Calendar Year 2016. That is, in this filing, the policy years used in the analysis are evaluated at the end of Calendar Year 2016.

As has been the case in recent DCRB filings, a review of Unit Statistical Plan data showed claim closure rates that tended to be deteriorating somewhat over time, historically. However, the most recent data shows some signs of improvement. In addition, a review of the portion of reported losses that have been paid at successive annual stages, from financial data, provides mixed results regarding improvements or deterioration in the length of time for clams to be paid. Exhibit 7 provides both sets of results.

With the benefit of extensive staff review and discussion by the Actuarial Committee, the DCRB has based estimates of ultimate indemnity losses in the filing on the average of the case incurred loss development method and paid loss development applied over as long a development period as is available from the DCRB's data, with case incurred loss development used for the remaining development to an ultimate basis.

Consistent with practices in numerous prior DCRB filings, ultimate loss estimates for this filing have been determined using the average of the results of the case incurred loss development method and the paid loss development method, applied over as long a development period as is available from the DCRB's data.

As in prior analyses, the DCRB used the following approach to smooth fluctuations arising due to the limited volume of data available for the analysis:

- Use of four-year average loss development factors
- Smooth loss development factors using various mathematical models and curves fitted through the observed multi-year averages
- Use trend procedures which rely on multi-year averages rather than individual year ultimate loss and loss adjustment expense ratios

A comparison of results of loss development methods used in the filing may be seen on the enclosed Exhibit 2 – Limited Losses at the top of Page 2.5 for indemnity loss and at the top of Page 2.17 of the same exhibit for medical loss.

Trend Provisions, Exhibit 12

Each DCRB filing applies to a prospective time period. Since historical data is used in the analysis, it is necessary to account for any anticipated changes in loss ratios over the time between the end of the available data and the policy period to which the proposed rates will apply. This is known as "trend" analysis.

Since 2002, the DCRB has used a trend approach that separates policy year loss ratio trends into frequency and severity components. Frequency is measured on the basis of indemnity

claims per unit of expected loss at a constant DCRB rate level. The use of expected loss in the calculation of frequency incorporates exposure trend, but is not affected by loss cost changes.

Policy year on-level ultimate loss ratios are adjusted to a series of severity ratios by removing the effects of actual observed changes in the frequency of indemnity claims. The series of resulting severity ratios represent the policy year loss ratios that would have applied if all years had the same claim frequency. The result is a series of indices of claim severity. Loss ratio trends can then be derived as the combined result of separately determined claim frequency and claim severity trends.

In both the frequency and severity trend analyses, the goal is to develop the best estimate of frequency and severity in the upcoming policy period based on recent historical data.

Frequency

Frequency analysis by the DCRB is based on Unit Statistical Data as shown in Exhibit 23. There are two immediate observations. First, in Filing No. 1502, Policy Year 2013 was the most recent year and showed a frequency increase of more than 5.8% when compared to Policy Year 2012. In last year's filing, No. 1603, the increase from Policy Year 2012 to Policy Year 2013 was still apparent at +5.0% but the change from Policy Year 2013 to Policy Year 2014 was a change of -19.2%. With this filing, more mature data shows more tempered changes in direction. The change between Policy Years 2012 and 2013 is an increase of 4.5%, while from 2013 to 2014 the change is -13.5%. The newest data includes Policy Year 2015, which shows a frequency change from Policy Year 2014 of +6.4%. While the year to year changes show opposite sings for these recent policy years, overall frequency continues to decline.

Second, Policy Years 2009 and 2010 continue to show very little change in claim frequency. These policy years are thought to be influenced by recessionary conditions, which may not be representative of conditions in the upcoming policy year. As a result, the DCRB analyzed two trend periods and selected the average of the results of the two analyses for frequency trend. The first analysis uses the seven-point exponential trend in Policy Years 2009 through 2015. The second analysis uses the seven-point exponential trend from 2007 through 2015 with 2009 and 2010 excluded. Adjustments of this type have been used in prior DCRB filings. In DCRB Filing No. 1105, effective December 1, 2011, Policy Year 2009 was treated separately. More recently, the current approach has been used in the DCRB's three most recent annual filings (Nos. 1404, 1502 and 1603).

Given the disjointed nature of available Delaware claim frequency data (generally declining, flat over Policy Years 2009-2010, increasing in Policy Year 2013, decreasing in Policy Year 2014, increasing in Policy Year 2015), the DCRB considered a variety of approaches to estimate claim frequency trend for this filing. The result is a selected frequency trend of -5.0%, which is 1.3 percentage points higher than in Filing No. 1603 (-6.3%).

Severity

In estimating claim severity trends, the DCRB applied both linear and exponential trend models to the policy year severity ratios produced by the loss development methods discussed above. Indemnity and medical ratios were treated separately and, for each method, the linear and exponential models were applied to all possible numbers of policy years from four through ten.

For indemnity benefits, the DCRB applied a seven-point exponential trend model, which gave a severity trend, based on Policy Years 2009 to 2015, of +4.0%. When combined with frequency trend, the resulting indemnity loss ratio trend is -1.2% per year:

$$0.950 \times 1.040 = 0.988$$

Indemnity loss ratios for this filing were then trended to December 1, 2018, the mid-point of the prospective rating period, by applying the claim frequency and claim severity trends to each of the most recent four policy year loss and loss adjustment expense ratios. The final projected indemnity loss and loss adjustment expense ratio, 0.2617, is based on the average of these four trended policy year indemnity loss and loss adjustment expense ratios.

The same claim frequency trend analysis used for indemnity loss was used for medical benefits. While the DCRB's measure of claim frequency uses only indemnity claims, the vast majority of medical benefits are attributable to indemnity cases. This approach is consistent with prior filings.

The adjudication of the DCRB's December 1, 2009 filing included an adjustment to medical severity trend based on the Department of Insurance's expectation that such trend would be more favorable after the implementation of the Delaware medical fee schedule, due to SB1, than before that transition. Medical severity trend was adjusted with a 1.8% reduction in annual loss ratio or claim severity trend.

Subsequent to the enactment of SB1, it came to light that the regulation of provider charges for hospitals and ambulatory surgical centers intended under that legislation had not been accomplished by virtue of both legal and practical limitations. SB238 addressed these issues by changing the regulation of hospitals and ambulatory surgical centers with a mechanism for adjusting reimbursements from prevailing charges at levels consistent with the original intent of SB1. These changes became effective January 31, 2013.

The DCRB evaluated the impacts of hospital and ambulatory surgical center charges escaping the intended effects of SB1 and found that the trend adjustment would have been 1.5% instead of 1.8% from the implementation of SB1 to the effective date of SB238. These two trend deflections are now included in the underlying experience, which is stated on a post-HB175 basis, as discussed above, and are no longer used to adjust medical severity trend.

The DCRB used a seven-point exponential trend fit through policy year medical claim severity ratios from Policy Years 2009 – 2015, resulting in an annual trend rate of +8.3%. When combined with frequency trend, the resulting medical loss ratio trend is +2.9% per year:

$$0.950 \times 1.083 = 1.029$$

Medical loss ratios for this filing were then trended to December 1, 2018, the mid-point of the prospective rating period, by applying the claim frequency and claim severity trends to each of the most recent four policy year loss and loss adjustment expense ratios. The final projected medical loss and loss adjustment expense ratio, 0.4781, is based on the average of these four trended policy year medical loss and loss adjustment expense ratios.

Determination of the Permissible Loss Ratio for Proposed Residual Market Rates, Exhibit 9

It is common in preparing workers compensation rate filings to use methods that explicitly recognize investment income in concert with anticipated cash flows, benefit costs and expense needs. The actual methods used differ from jurisdiction to jurisdiction. The DCRB's approach has been to directly compute a permissible loss and loss adjustment expense ratio consistent with an independently established target rate of return. This is the same approach as has been used in previous annual filings.

The prospective determination of an appropriate overall rate of return, which workers compensation insurers should be entitled to earn given the risk they assume in underwriting this line of business, is accomplished by a variety of economic analyses which are generally based on expected returns for businesses subject to risk levels comparable to that of underwriting workers compensation insurance. These methodologies next proceed by establishing a set of cash flows representing the various transactions related to the underwriting of workers compensation insurance. These cash flows include the expected patterns for the receipt of premiums, payment of losses and expenses, use of tax credits and/or payment of tax obligations, and maintenance of surplus funds in support of the business. Expense needs to which the expense cash flows will apply are determined based on historical experience.

Estimates of the probable investment results that an insurer underwriting workers compensation insurance may expect to achieve were made by reviewing existing insurer investment portfolios and prevailing investment returns on various forms of investments in them. Applying these estimates to the cash flows previously established allows an explicit presentation of the effects of investment income throughout the life of a book of workers compensation policies and an estimate of the value of that income to the insurer.

Based on the set of cash flows determined to apply to prospective policies and the estimated parameters of investment yields, federal tax laws, etc., these methods model all expected cash flows over the entire period during which payments attributable to a given policy period are expected to continue. For any given loss provision in rates, the present value of these cash flows can then be consolidated and compared to the target rate of return. The loss provision accomplishing a balance between the expected and target rates of return then becomes the basis for the permissible loss ratio. Within the concept of the Internal Rate of Return (IRR) Model used by the DCRB, the loss provision includes provision for amounts generally related to losses such as loss adjustment expense and loss-based assessments.

This filing, as has been done in previous DCRB filings, recognizes investment income on reserve and surplus funds in determining the overall expected return for carriers from writing workers compensation business in Delaware.

The analysis supporting this filing indicates a needed underwriting profit provision of +1.08%. For Filing No. 1603, the DCRB had derived an underwriting profit provision of +4.00%.

For this filing, the DCRB has again retained an independent economic consultant to perform the above-described analyses. Results of this work are presented in complete detail in Exhibit 9.

Additional expense provisions are shown in Exhibit 8 and the expense loading is shown in Exhibit 11.

Considerations Regarding the Experience Rating Plan, Exhibits 13, 20, 21 and 27

The DCRB reviews the performance of the Experience Rating Plan as part of its analysis supporting each annual rating value filing submitted to the Department of Insurance. Fluctuations in results of the plan, in particular movement in the average experience modification produced by the plan, are measured and accounted for in the derivation of proposed changes in manual rates and loss costs. This allows the Experience Rating Plan to reallocate premium obligations among insureds based on the merits of their past experience but not either increase or reduce the total amount of premium indicated by the DCRB's benchmark filings of residual market rates and voluntary market loss costs.

The DCRB based the Collectible Premium Ratios used to derive manual rating values for purposes of this filing on the most recent three completed available years of Market Profile data as shown in Exhibit 20. This approach is used to support the proposed collectible rate and loss cost changes and to provide more current recognition of the probable impact of experience rating for the upcoming rating period.

CLOSING COMMENTS AND QUALIFICATIONS

DCRB Filing No. 1701 fully and fairly reflects the most recent available experience indications in Delaware, together with all initial and continuing effects of SB1, SB238, HB175 and HB373. The DCRB respectfully requests a timely review of this filing, allowing implementation on a new and renewal basis **effective December 1, 2017**. A timely review will allow adequate advance notice of final residual market rates and voluntary market loss costs and related rating values to all participants in the Delaware marketplace. Toward that objective, the DCRB will be pleased to answer any questions or provide any available supplementary information which you, your staff and consultants reviewing this filing on your behalf may require.

This filing has been developed by and under the direction of John R. Pedrick, FCAS, MAAA and Kenneth M. Creighton, ACAS, MAAA. They both meet the Qualification Standards of the American Academy of Actuaries to provide the actuarial opinion contained within this filing.

Please direct all questions to:

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APPENDIX – LEGISLATIVE CHANGES

Here is a brief summary of the major legislative changes in Delaware over the last decade.

Senate Bill 1, 144th GA

SB1 was signed into law on January 17, 2007. This was a landmark piece of legislation, creating several features of the health care payment system in Delaware. It included the following notable components:

- Established a Health Care Advisory Panel
- Provided for a health care payment system intended to control health care costs in connection with workers compensation
- Provided for the establishment of health care practice guidelines
- Provided for the development of certification standards for health care providers treating employees in the workers compensation system
- Provided for the adoption of forms and a consistent and uniform reporting system among employees, employers, insurance carriers and health care providers
- Adopted standards for billing and payment of health care services
- Required contractors and other parties doing substantial work within Delaware to adequately insure their employees for workers compensation under the laws of Delaware
- Authorized payment of indemnity benefits or health care benefits without prejudice against the right to later contest the employer's obligation to pay the expense in question
- Established new procedures for attorney fees in workers compensation matters
- Clarified the obligations of independent contractors and subcontractors with respect to maintaining workers compensation insurance
- Clarified the calculation of wage rates, especially in cases where employees had limited work histories
- Implemented procedures for the collection of data relevant to workers compensation including injury reports, mandatory insurance requirements and health care treatments and costs

Senate Bill 238, 146th GA

SB238 was signed into law on August 7, 2012, and revised procedures used to determine payments to hospitals and ambulatory surgery centers for services provided to workers compensation claimants. SB238 made technical improvements to the changes in SB1.

House Bill 175, 147th GA

HB175 was signed into law on June 27, 2013, arising from work done by the Workers' Compensation Task Force created by House Joint Resolution 3.

House Bill 373, 148th GA

HB373 was signed into law on July 15, 2014, and included the following notable components:

- A 33% reduction in medical expenditures phased in over a three-year period (20%, 5% and 8%)

- Imposed caps expressed as percentages of Medicare per-procedure reimbursements beginning on January 31, 2017
- Revised certain procedures pertaining to the position of Ratepayer Advocate

House Bill 166, 148th GA

HB166 was signed into law on July 27, 2015, and included the following provisions:

- Defined "health care provider" for purposes of §2301
- Allowed recognition of savings other than fee schedule changes in accomplishing the reductions in medical expenditures required by HB373
- Modified procedures applicable to the reimbursement for medical treatment and procedures performed outside Delaware
- Authorized the Workers Compensation Oversight Panel to adopt rules requiring electronic medical billing and payment processes and to standardize documentation required for billing adjudication
- Provided for the certification of healthcare providers not licensed by Delaware
- Made the utilization review program applicable to health care providers regardless of whether such providers are certified under §2322D

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