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TO: The Honorable Karen Weldin-Stewart, CIR-ML
Delaware Insurance Commissioner

FROM: John R. Pedrick, FCAS, MAAA
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DATE: August 2, 2016

SUBJECT: DCRB Filing No. 1603, Workers Compensation Residual Market Rate and Voluntary Market Loss Cost Filing, Proposed Effective December 1, 2016 (Selected Portions Effective June 1, 2017)

This actuarial memorandum provides a discussion of the analysis performed by the DCRB that results in proposed changes in Residual Market Rates and Voluntary Market Loss Costs, rating values and supplementary rate information for Workers' Compensation 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 Change	Residual Market Rates	Voluntary Market Loss Costs
	+3.18%	+1.68%

The actuarial methods in the filing have not changed from those used in the prior annual filing, No. 1502, while the underlying experience has been updated with a new year of data. The calculations reflect the full estimated impact of Senate Bill 1 (SB1), Senate Bill 238 (SB238) and House Bill 175 (HB175). The impact of HB373 is based on a projection of the statutorily mandated reductions in medical expense, and fully reflects these reductions, even though they have not all been implemented and there is not sufficient data to accurately estimate the true impact. 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	+3.18%	+1.68%
75% of HB373 Savings Realized	+9.88%	+8.29%
50% of HB373 Savings Realized	+16.63%	+14.94%
25% of HB373 Savings Realized	+23.36%	+21.57%
No HB373 Savings	+30.06%	+28.17%

The task involved in the calculations within this filing is to develop an actuarially sound estimate of the costs of claims will arise for policies written in the upcoming policy period – the year beginning December 1, 2016. To meet the statutory standard that rates shall not be excessive, inadequate or unfairly discriminatory, the estimate of future costs must reflect all costs. At this time it is not possible to accurately estimate whether the cost reductions that are expected by the language of HB373 will actually emerge in the medical costs for workplace injuries that occur in the upcoming policy period. Within this filing, DCRB has assumed that 100% of the HB373 savings will be realized. It is not common for the intended savings in legislation to be fully realized in workers' compensation insurance. Nevertheless, the DCRB supports and commends the Delaware Workers' Compensation Oversight Panel (WCOP) as it makes further recommendations to fully achieve the savings contemplated in HB373, as well as its work to identify problems in the Delaware system and recommend solutions. With doubt concerning the final outcome of HB373, the DCRB nevertheless has assumed in this filing that the full extent of the HB373 savings will emerge. If future claim cost experience indicates otherwise, the DCRB reserves the right to file rates and loss costs that reflect the new experience.

The supporting exhibits and other attachments accompanying this letter 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, 2016.

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. 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 the DCRB's residual market rate and voluntary market loss cost filings since the inception of the surcharge program, the expected amounts of the Plan surcharges were accounted for in the form of offsets to voluntary market loss costs. This filing proposes to continue these practices.

The average change in collectible rate level for the residual market prior to the effect of Plan surcharges proposed in this filing is an increase of 3.18%.

The components of the proposed overall change in residual market rates are shown below, with the effects of SB1, SB238, HB175 and HB373 shown first, and the remaining components in descending order of their impact on the filing indication

Components of Indicated December 1, 2016 Change in Residual Market Rates		
	Component	Impact on Indication
1	Senate Bill 1	-12.31%
2	Senate Bill 238	-0.28%
3	House Bill 175	-4.01%
4	House Bill 373	-20.68%
5	Limited Medical Loss Experience	+26.79%
6	Medical Excess Loss	+18.52%
7	Loss Adjustment Expense	+7.52%
8	Expenses other than LAE and Loss Based Assessments	+1.13%
9	July 1, 2016 Benefit Change	+0.69%
10	Limited Indemnity Loss	+0.20%
11	Indemnity Excess Loss	-0.43%
12	Loss Based Assessments	-0.85%
13	Change in Limited Indemnity Trend	-2.23%
14	Change in Limited Medical Trend	-2.61%
	Overall Indicated Change	+3.18%
Note that the total results from converting the percentages to factors (e.g., -12.31% is 0.8769 in factor form) and calculating the product of all 14 factors.		

These components can be summarized into broader categories:

Category	Impact on Indication
Legislation (1, 2, 3, 4)	-33.42%
Indemnity Loss (10, 11, 13)	-2.46%
Medical Loss (5, 6, 14)	46.35%
Loss Adjustment Expense (7)	+7.52%
July 1, 2017 Benefit Change (9)	+0.69%
Other Expense and Loss Based Assessments (8, 12)	+0.27%
Overall Indicated Change	+3.18%

Voluntary Market Loss Costs

Since the enactment of HB241 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, policy

forms, uniform classification and experience rating plans and rules and supporting information relating thereto. Advisory organization filings specifically exclude provisions for profit or for 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 by reference, with or without deviation, loss costs filed by the advisory organization or the rates and supplementary information filed by another insurer.

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 proposed premium structure for residual market rates in this filing is shown below, with comparative values from the approved current rates for ease of reference.

Item	Current Provision As a Percent of Premium	Proposed Provision As a Percent of Premium
Loss	57.34	56.50
Loss Adjustment Expense	11.46	11.59
Commission	6.14	5.56
Other Acquisition	2.74	2.56
General Expenses	3.20	3.63
Premium Discount	8.95	8.62
State Premium Tax	2.00	2.00
Other State Taxes	0.33	0.32
Uncollectible Premium	0.80	1.32
Administrative Assessment*	2.22	1.90
Workers Compensation Fund	3.00	2.00
Underwriting Profit	1.82	4.00
Loss, LAE and Administrative Assessment*	71.02	69.99
* Denotes loss-based assessment		

Under Delaware law, loss adjustment expenses and loss-based assessments are included in the loss costs filed by the DCRB. Thus the combined provision for loss, loss adjustment expense and loss-based assessments (the provision for loss costs) is 69.99% of the DCRB's proposed Plan rates. The DCRB's proposed voluntary market loss costs in this filing are thus based on rating values computed by multiplying the proposed Plan rates (before application of some applicable surcharges) by a factor of 0.6999. The provision for loss costs in current rates

is 71.02%. As a result, the indicated increase in voluntary market loss costs is 1.68%, which is computed as follows:

$$1.0318 \times 0.6999 / 0.7102 = 1.0168$$

The proposed increase in voluntary market loss costs is attributable to the same factors previously identified in the discussion of 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. Consistent with that observation, the loss ratio of Plan accounts was higher than that of voluntary business by more than 103% in the period 2009–2013.

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 8.49%. This estimate is based on the most recent available policy year, 2015, the second year since 2010 in which the Plan market share decreased compared to the previous year.

This filing retains the above-described 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 23.0% 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 10.2% 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 Plan 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, 2017	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 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

SUPPORTING INFORMATION FOR THE FILING

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:

- Impacts 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

These are the major topics underlying the proposed changes in residual market rates and voluntary market loss costs.

Impacts of Legislative and Regulatory Changes, Exhibits 33, 34 and 35

Senate Bill 1 was signed into law on January 17, 2007. This was a landmark piece of legislation, and 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

SB1 created several features of the health care payment system in Delaware. Savings attributable to SB1 were estimated in DCRB filing No. 0806, as a 17.40% reduction in projected ultimate medical loss, which was approved by the Department of Insurance as filed. This assumption has been used in all subsequent filings, including this filing.

Senate Bill 238 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, and added an additional 0.42% reduction in projected ultimate medical loss. Additional details regarding SB238 and the DCRB's analysis are contained in Exhibit 33.

House Bill 175 was signed into law on June 27, 2013, arising from work done by the Workers' Compensation Task Force created by House Joint Resolution 3. The estimated impact of HB175 is an additional 6.03% reduction in projected ultimate medical loss. Additional details regarding HB175 and the DCRB's analysis are contained in Exhibit 34.

House Bill 373 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

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. It is premature to pass judgement 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, 2015. At that time, the first of three changes in fee schedules had been in place for 11 months. The second fee schedule change was implemented on January 31, 2016, and the third and final change is scheduled for implementation on January 31, 2017. The magnitude of the changes needed for the final adjustment have not yet been determined by the WCOP. As a result, there is not yet sufficient data to analyze the true impact of HB373. As mentioned earlier, the DCRB used the projected impact of the legislated changes under the assumption that they will be fully implemented, estimated to be an additional 31.74% reduction in projected ultimate medical loss. The DCRB reserves the right to file changes in rates and loss costs when sufficient data is available to more accurately analyze the actual impact of HB373.

House Bill 166 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

While the changes in HB166 supplement the changes in the other bills mentioned above, the DCRB does not believe they will bring additional reductions in medical expenditures.

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 that a small number of large claims can have 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.

In addition, the loss amounts are stated on a "pre-SB1" basis. That is, at levels prior to the estimated effects of SB1, SB238, HB175 and HB373. Loss development and trend analyses are based on losses at the pre-SB1 level. In order to use the analysis to determine indicated rating value changes, 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 ($1,500,000) 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, 2015 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, 2015.
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, 2015, 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 $395,600 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.
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 $3,550,000 on a pre-SB1 basis (reflecting benefit levels and system provisions in effect immediately prior to 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 combined effects of SB1, SB238, HB175 and HB373, which resulted in a loss limitation of $1,799,204.
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.

Discussion of the DCRB's estimation of policy year ultimate loss and loss adjustment expense ratios and trend provisions following below are offered and should be read in the context of the loss limitation procedure outlined above.

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

Much of the analytical effort required in workers compensation insurance ratemaking is devoted to the evaluation of loss experience from prior periods of time. The following points are important in considering this aspect of workers compensation ratemaking:

- Results of past experience form a vitally important base of information when developing the prospective estimates in this filing.
- Because workers compensation losses may be paid out over an extended period of time after the occurrence of an accident and the filing of a claim, results of recent periods of experience must themselves 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 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, one 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 2015. That is, in this filing, the policy years used in the analysis are evaluated at the end of Calendar Year 2015.

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.

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 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 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 period of time beginning after the end of the available historical data. As a result 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.

In support of each of its rating value filings submitted in the Years 2002 - 2015, the DCRB has used a trend approach that separates policy year loss ratio trends into "severity" and "frequency" components. Policy year on-level ultimate loss ratios were adjusted to a series of "severity ratios" by removing the effects of actual observed changes in the frequency of

indemnity claims per unit of expected loss at a constant DCRB rate level. 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 the prior 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. With this year's analysis, the increase from Policy Year 2012 to Policy Year 2013 is still apparent at +5.0%, but the change from Policy Year 2013 to Policy Year 2014 is a change of -19.2%. This reversion to the long-term downward direction provides support for DCRB's selection of a lower (i.e., more negative) frequency trend.

Second, in this analysis, Policy Years 2009 and 2010 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 2008 through 2014. The second analysis uses the seven-point exponential trend from 2006 through 2014 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 two most recent annual filings (Nos. 1404 and 1502).

Given the disjointed nature of available Delaware claim frequency data (generally declining, flat over Policy Years 2009-2010, increasing in Policy Year 2013, and decreasing in Policy Year 2014) the DCRB considered a variety of approaches to estimating claim frequency trend for this filing. The result is a selected frequency trend of -6.3%, a full 1% lower than in Filing No. 1502 (-5.3%). This result is a key reason for the relatively low, single-digit overall indicated changes in this filing.

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 referred to previously. 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, a review of alternative trend model indications, including graphic presentations of indemnity loss and severity ratios over the past several years for selected

models, showed higher severity trends when fewer policy year data points were used. Procedures used in recent DCRB filings had applied a seven-point exponential trend model, which gave a severity trend in the lower mid-range of the indications considered. Accordingly, the DCRB used a seven-year exponential trend model applied to indemnity claim severity ratios for the Policy Years 2008 to 2014 and derived an annual severity trend rate of +7.2%.

Indemnity loss ratios for this filing were then trended to December 1, 2017, the mid-point of the prospective rating period, by applying the above-described annual rates of change in claim frequency and claim severity to each of the most recent four policy year loss ratios. The final projected indemnity loss and loss adjustment expense ratio, 0.2717, 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, and many prior filings have also used this approach.

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 than before that transition. The trend adjustment so required was in the amount of a 1.8% reduction in annual loss ratio or claim severity trend.

While the DCRB could not and cannot estimate whether or the extent to which the provisions of SB1 affected medical trend, the opinion that some mitigation of medical trends should be applied upon the implementation of the medical fee schedule was widely held by the Department and its consultants in their review of the 2009 filing. After considering analytical and administrative alternatives, the DCRB elected to incorporate the mandated improvement in medical trend from the 2009 filing's adjudication in each subsequent annual rating value filing through, and including, DCRB Filing No. 1502.

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. Providers could not separate workers compensation cases from other services and charge them different amounts than were applicable to other patients due to Medicare requirements. Further, neither providers nor payers had sufficient historical information to index charges or reimbursements back to historical benchmarks envisioned under SB1.

SB238 addressed these issues by changing the regulation of hospitals and ambulatory surgical centers from specifying allowable charges to providing 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.

Since the medical fee schedule became fully operational on or about September 1, 2008 in Delaware, for this filing, the DCRB has applied the 1.5% change in medical trend to time periods extending from September 1, 2008 to January 31, 2013, and has applied the 1.8% change in medical trend to the period after January 31, 2013.

The DCRB used a seven-point exponential trend fit through policy year medical claim severity ratios from Policy Years 2008 – 2014, resulting in an annual trend rate of +11.0%, applicable up through September 1, 2008. Between September 1, 2008 and January 31, 2013, the 1.5 point decrement mentioned above resulted in an annual medical claim severity trend of +9.5%. After January 31, 2013, the 1.8 point decrement mentioned above produced a medical severity trend of +9.2%.

Medical loss ratios for this filing were then trended to December 1, 2017, the mid-point of the prospective rating period, by applying the above-described annual rates of change in claim frequency and claim severity to each of the most recent four policy year loss ratios. The final projected medical loss and loss adjustment expense ratio, 0.6572, 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 +4.00%. For Filing No. 1502, the DCRB had derived an underwriting profit provision of +1.82%.

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, so that the Experience Rating Plan can 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.

In previous filings, the DCRB made use of its Market Profile Reports as a supplement to available unit statistical data to gauge recent and ongoing trends in the important system metric of Collectible Premium Ratios. For this filing, 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.

ADDITIONAL MATERIALS PROVIDED WITH THIS FILING

The following materials provide supplementary and supporting information pertinent to this filing.

- Record of Meeting - Actuarial Committee, July 26, 2016. *Note that these minutes are in the process of being reviewed and approved by the committee and accepted by the Governing Board. If there are any changes resulting from this process, a revised final copy will be promptly forwarded to the Department of Insurance.*
- Summary of material for modification of experience (Brown Book)

INDEX OF EXHIBITS

Exhibit 29	Delaware Workplace Safety Program & Merit Rating Program
Exhibit 30	Distribution of Residual Market Rate Changes and Classifications with Proposed Capped Changes
Exhibit 31a	Summary of Indicated and Proposed Residual Market Rates by Class Code
Exhibit 31b	Summary of Indicated and Proposed Residual Market Rates by Percentage Change
Exhibit 33	Evaluation of Senate Bill 238 of 2012
Exhibit 34	Evaluation of House Bill 175 of 2013
Exhibit 35	Evaluation of House Bill 373 of 2014
Exhibit 1 Unlimited Losses	Table I – Summary of Financial Call Data
Exhibit 2 Unlimited Losses	Paid and Incurred Loss Development and Trend
Exhibit 2a Unlimited Losses	Graphs of Selected Loss Development Projections
Exhibit 3 Unlimited Losses	Measures of Goodness of Fit in Trend Calculations Using Severity Ratios
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