Iowa

Voluntary and Assigned Risk Rates and Rating Values Filing

Proposed Effective January 1, 2019

National Council on Compensation Insurance

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July 31, 2018

Honorable Doug Ommen
Insurance Commissioner
Iowa Insurance Division
601 Locust St., 4th Floor
Des Moines, IA 50309-3738

Re: **Iowa Voluntary and Assigned Risk Rates and Rating Values Filing Proposed Effective January 1, 2019**

Dear Commissioner Ommen:

In accordance with the applicable statutes and regulations of the state of Iowa, we are filing for your consideration and approval advisory prospective rates and rating values for the Iowa voluntary and assigned risk markets to become effective January 1, 2019 for new and renewal policies.

This filing proposes an overall average decrease of 9.2% in voluntary and in assigned risk rates. The advisory prospective rates of the voluntary market are used as a basis for the rates in the assigned risk market.

This filing is made exclusively on behalf of the companies that have given valid consideration for the express purpose of fulfilling regulatory rate or pure premium filing requirements and other private use of this information.

The following are of special note as a result of item filings approved in Iowa:

- As a result of Item B-1397, effective January 1, 2008, a single combined rate is still calculated for Class Codes 7710 and 7711 via a payroll-weighted average of the separately indicated rates for these two class codes.
- As a result of Item B-1435, effective January 1, 2018:
  - Class Codes 2534 and 2501 are combined to reflect the final year of a two-year transition program, and Class Code 2534 is discontinued.
- As a result of Item B-1436, effective January 1, 2019:
  - Class Codes 8825 and 8826 are combined to reflect the first year of a two-year transition program. In the second year of the transition, Class Code 8825 will be discontinued.
- As a result of Item R-1414, new parameters are shown on the retrospective rating plan manual pages effective January 1, 2019.

In the enclosed appendix is a list of companies which, as of the time this filing is submitted, are eligible to reference this information. The inclusion of a company on this list merely indicates that the company, or the group to which it belongs, is affiliated with NCCI in this state, or has licensed this information as a nonaffiliate, and is not intended to indicate whether the company is currently writing business or is even licensed to write business in this state.

As always, if you should have any questions or need additional information, please do not hesitate to contact Brett Foster at (561) 893-3121 or me at (561) 945-4517.

Respectfully submitted,

National Council on Compensation Insurance, Inc.

Clarissa Preston
State Relations Executive
Regulatory Division

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Actuarial Certification

I, Brett Foster, am a Manager and Associate Actuary for the National Council on Compensation Insurance, Inc. I am a Fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries, and I meet the Qualification Standards of the American Academy of Actuaries to provide the actuarial report contained herein.

The information contained in this report has been prepared under my direction in accordance with applicable Actuarial Standards of Practice as promulgated by the Actuarial Standards Board. The Actuarial Standards Board is vested by the U.S.-based actuarial organizations with the responsibility for promulgating Actuarial Standards of Practice for actuaries providing professional services in the United States. Each of these organizations requires its members, through its Code of Professional Conduct, to observe the Actuarial Standards of Practice when practicing in the United States.

Brett Foster, FCAS, MAAA
Manager and Associate Actuary
Actuarial and Economic Services

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Disclosures

Purpose of the Report

The purpose of this report is to provide the proposed voluntary and assigned risk rates for workers compensation policies in Iowa, proposed to be effective January 1, 2019. The intended users of this report are:

- The Iowa Insurance Division
- Affiliated carriers, for their reference in determining workers compensation rates

Scope

The prospective advisory rates for the voluntary market are intended to cover the indemnity and medical benefits provided under the system, the expenses associated with providing these benefits (loss adjustment expenses), and any other costs associated with providing workers compensation insurance (such as commissions, taxes, etc.).

Each insurance company offering workers compensation insurance in Iowa may:

a) adopt the advisory rates which include provisions for expenses based on NCCI's compilation of industry expense data, or

b) deviate from the advisory rates.

Employers unable to secure coverage in the voluntary market can apply for such coverage in the assigned risk market. The proposed assigned risk rates are intended to cover the indemnity and medical benefits provided under the system, the expenses associated with providing these benefits (loss adjustment expenses), and any other costs associated with providing workers compensation insurance (such as commissions, taxes, etc.).

Data Sources and Dates

The overall average advisory rate level change is based on a review of Financial Call Data, which is an aggregation of workers compensation data annually reported to NCCI. In this filing, Financial Call Data submissions received after May 25, 2018 were not considered for inclusion in the analysis.

Advisory rate level changes at the classification code level are based on Unit Statistical Data, which is the audited exposure, premium and loss information reported to NCCI on a policy level. In this filing, Unit Statistical Data submissions received after June 19, 2018 were not considered for inclusion in the analysis.

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Disclosures

In some areas, NCCI's analysis also relies on other data sources, which are reviewed for reasonableness and are referenced in the filing where applicable.

This filing was prepared as of June 28, 2018. Therefore, events that occurred after this date that may have a material impact on workers compensation costs in this jurisdiction have not been considered in the analysis.

NCCI maintains several data reporting initiatives and programs to assist carriers to report data and to ensure that the data that is reported to NCCI is complete, accurate, and reported in a timely fashion. Occasionally, a carrier's data submission is not available for use in an NCCI filing either because the data was not reported prior to the filing, had quality issues, or NCCI determined that the data that was reported should not be included in the filing based on NCCI's actuarial judgment.

Data for all carriers writing at least one-tenth of one percent of the Iowa workers compensation written premium volume have been included in the experience period on which this filing is based.

Other exclusions are made for the purposes of analysis, but do not have a material impact on the proposed changes in this filing.

Risks and Uncertainty

This filing includes assumptions and projections concerning the future. As with any prospective analysis, there exists estimation uncertainty in these assumptions and projections. Areas of this analysis subject to estimation uncertainty that could have a material impact on the final results include the following:

- Projection of future loss development
- Selection of loss ratio trends
- Potential impact of changes to laws and/or regulations

In addition, any future changes to workers compensation law or regulations that apply retroactively to policies or benefit claims on policies in the proposed effective period may have a significant impact on the adequacy of the rates proposed in this filing.

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Executive Summary

Based on its review of the most recently available data, NCCI has proposed an overall average workers compensation voluntary and assigned risk rate level change of -9.2% to become effective January 1, 2019.

Key Components	Percentage Change
Impact of change in Experience and Development	- 4.9%
Impact of change in Trend	- 4.4%
Impact of change in Benefits	0.0%
Impact of change in Production and General Expenses	+ 0.3%
Impact of change in Taxes & Fees	- 0.1%
Impact of change in Loss-based Expenses	+ 0.3%
Impact of change in Profit & Contingency	- 0.7%
Proposed Change in Overall Voluntary Rate Level	**- 9.2%**
Impact of change in Assigned Risk Differential	0.0%
Proposed Change in Overall Assigned Risk Rate Level	**- 9.2%**

Key observations:

- The filing is based on premium and loss experience for policy years 2015 and 2016. The financial data experience period evaluated as of December 31, 2017 shows improvement when compared with the experience period evaluated as of December 31, 2016 on which the previous filing was based.
- Iowa's claim frequency has declined in recent years.
- After adjusting to a common wage level, indemnity and medical average cost per case figures continue to show a long-term upward trend.

Proposed Changes in Voluntary Rate Level by Industry Group:

Industry Group	Average Change	Maximum Increase	Maximum Decrease
Manufacturing	- 8.7%	+ 16%	- 34%
Contracting	- 9.0%	+ 16%	- 34%
Office and Clerical	- 6.6%	+ 18%	- 32%
Goods and Services	- 10.7%	+ 14%	- 36%
Miscellaneous	- 8.7%	+ 16%	- 34%

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Executive Summary

Additional Notable Change(s) Proposed in the Filing:

- Classification Ratemaking – Revised Credibility Parameters
- Updates to Retrospective Rating

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Overview of Methodology

Aggregate Ratemaking

NCCI's approach to determining the proposed overall average advisory rate level change utilizes widely accepted ratemaking methodologies. The approach employed in this filing includes the following steps:

- The reported historical premium totals are projected to an ultimate basis and adjusted to the current pure premium level
- The excess loss portion of individual large claims are removed from reported aggregate losses, based on an Iowa specific large loss threshold
- The reported historical limited indemnity and medical loss totals are projected to an ultimate basis and adjusted to the current benefit level
- Ratios of losses to pure premium are projected to the cost levels expected in the rate effective period
- Ultimate, trended, limited losses are adjusted to an unlimited basis with an excess ratio
- Proposed benefit level and expense changes are applied to the projected cost ratios

The indicated average advisory rate level change is calculated for the years in the filing's experience period. If the final projected cost ratios are greater (less) than 1.000, then an increase (decrease) in the average rate level is indicated.

Class Ratemaking

Once the proposed overall average advisory rate level change has been determined, NCCI separately determines rates per $100 of payroll for each workers compensation job classification (class); the advisory rates and year-over-year changes vary by class. Three sets of pure premiums are combined as part of each class code's advisory rate calculation based on the volume of available data for that job classification. The three sets of pure premiums are:

- State-specific payroll and loss experience ("indicated")
- Currently-approved pure premium adjusted to the proposed level ("present on rate level")
- Countrywide experience adjusted to state conditions ("national")

Assigned Risk Rates

The proposed assigned risk rates are then determined for each job classification as the product of the classification's advisory rate and an assigned risk differential.

Note: The methodology and assumptions used in this filing may not be applicable to or relevant for another purpose, including but not limited to NCCI filings in other jurisdictions.

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Summary of Selections

The following is a summary of selections underlying the voluntary and assigned risk rates proposed to be effective January 1, 2019, along with the selections underlying the filing effective January 1, 2018.

Voluntary and Assigned Risk Rates	Approved January 1, 2018	Proposed Effective January 1, 2019
Experience Period	Policy Years 2014 and 2015	Policy Years 2015 and 2016
Premium Development	3-year average	3-year average
Basis of Loss Experience	Average of Paid and Paid+Case losses	Average of Paid and Paid+Case losses
Paid Loss Development	3-year average	3-year average
Paid+Case Loss Development	5-year average	5-year average
Tail Factors	Selected	Selected
Indemnity Annual Loss Ratio Trend Factor	0.995	0.985
Medical Annual Loss Ratio Trend Factor	1.005	0.990
Loss Adjustment Expense Provision	15.4%	15.7%
Base Threshold for Limiting Losses	$8,813,862	$8,510,109
Large Loss Excess Ratio	1.2%	1.3%
Production and General Expenses	23.3%	23.5%
Premium Taxes and Assessments	2.3%	2.2%
Profit and Contingencies Provision	0.0%*	-0.5%
Maximum Minimum Premium**	$1,000	$1,000
Assigned Risk Differential	1.300	1.300
Classification Swing Limits (applied by Industry Group)	+/-25%	+/-25%

* Updated for Law-Only Filing Effective June 1, 2018

** MMP varies for Farming and Agricultural class codes

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Selections Underlying the Proposed Changes

Experience and Development

NCCI analyzed the emerging experience of Iowa workers compensation policies in recent years. The primary focus of our analysis was on premiums and losses from policy years 2015 and 2016 evaluated as of December 31, 2017. The most recently available full policy year is 2016 since the last policy had an effective date of December 31, 2016 and did not expire until December 31, 2017. During this year's analysis, after reviewing various possible experience periods, the use of the two most recently available full policy years of data was selected as most appropriate in terms of providing balance between stability and responsiveness.

NCCI performs analysis on different subsets of data including (i) paid losses and (ii) the sum of paid losses plus case reserves. For use in this filing, NCCI utilized loss development factors based on each of these two loss aggregations. This is consistent with NCCI filings made in the past several years in Iowa. Loss development factors are needed since paid losses and case reserve estimates on a given claim change over time until the claim is finally closed. The loss development factors are based on how paid losses and case reserve estimates changed over time for claims from older years. The specific development link ratio selections underlying this filing are shown below:

- A three-year average of historical premium development factors
- A three-year average of historical paid loss development factors through a 19th report
- A five-year average of historical paid plus case loss development factors through a 19th report
- Loss development tail factors from a 19th report to ultimate were selected based on a review of the 10 most recently available factors

Trend

This filing relies primarily on the experience from policy years 2015 and 2016. However, the proposed voluntary and assigned risk rates are intended for use with policies with effective dates starting on January 1, 2019. It is necessary to use trend factors that forecast how much the future Iowa workers compensation experience will differ from the past. These trend factors measure anticipated changes in the amount of indemnity and medical benefits as compared with anticipated changes in the amount of workers' wages. For example, if benefit costs are expected to grow faster than wages, then a trend factor greater than zero is indicated. Conversely, if wages are expected to grow faster than benefit costs, then a trend factor less than zero is indicated.

While historical changes in claim frequency and average cost per case were also reviewed, NCCI applies loss ratio trend factors in the determination of the proposed overall average advisory rate level change.

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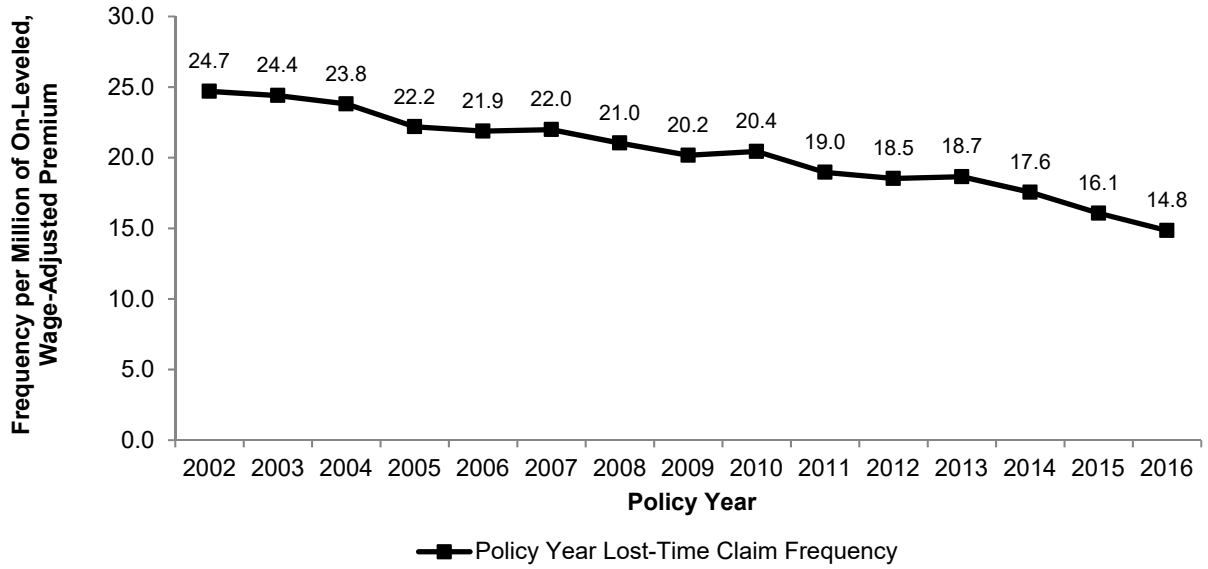
Selections Underlying the Proposed Changes

The following few charts show a measure of the number of workplace injuries (claim frequency) and the average cost of each of these injuries (claim severity).

Iowa Claim Frequency



Iowa's lost-time claim frequency has generally declined for the past several years as shown immediately above. The data in this chart reflects premiums at today's advisory rate level, and a common wage level.

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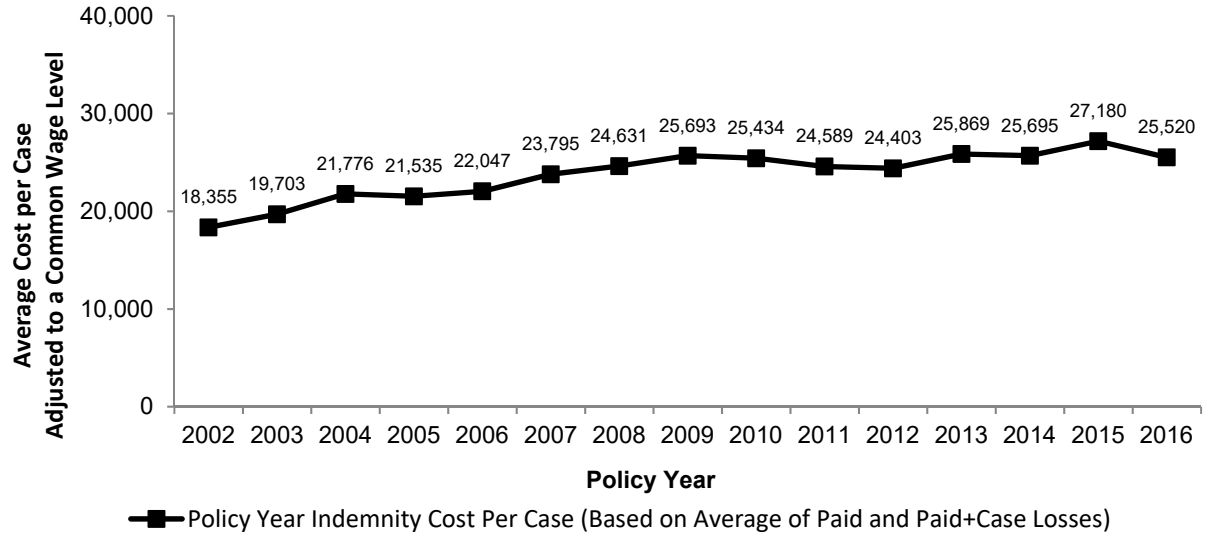
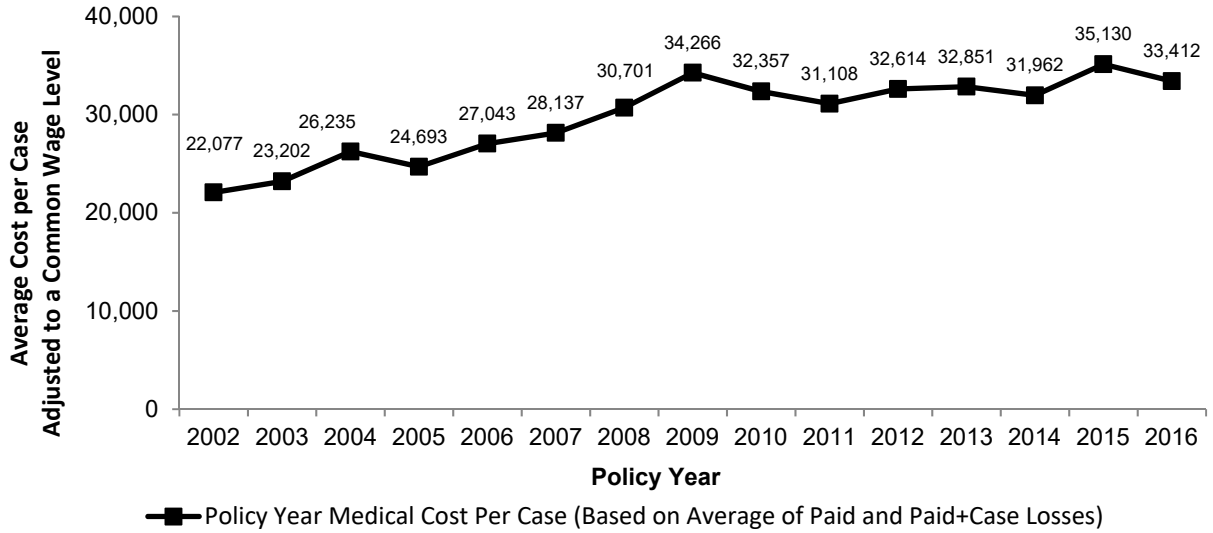
Selections Underlying the Proposed Changes

Iowa Indemnity Cost Per Case
Adjusted to a Common Wage Level



Iowa Medical Cost Per Case
Adjusted to a Common Wage Level



As these two charts illustrate, Iowa's average indemnity and medical costs per case in excess of wage growth have generally trended upward over time for the period shown.

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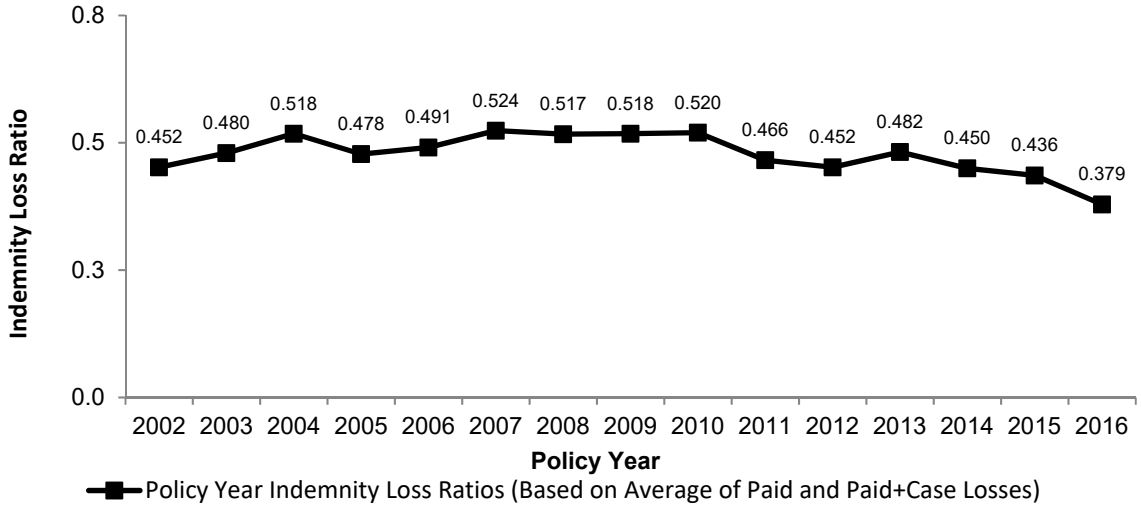
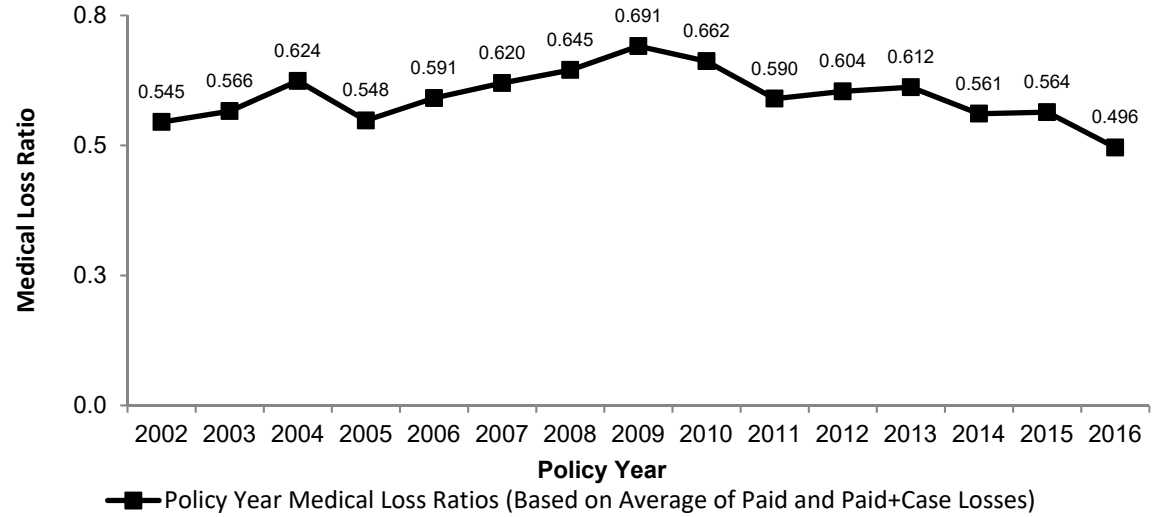
Selections Underlying the Proposed Changes

Loss ratios result after combining observed changes in Iowa's average claim frequency with corresponding changes in Iowa's average cost per case.

Iowa Indemnity Loss Ratio History



Iowa Medical Loss Ratio History



Based on our analysis this year, we are proposing to decrease the annual indemnity loss ratio trend from –0.5% to –1.5% and decrease the annual medical loss ratio trend from +0.5% to –1.0%.

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Selections Underlying the Proposed Changes

Benefit Changes

Workers injured in Iowa receive wage replacement (indemnity) benefits at a rate of 80% of their pre-injury spendable weekly wage. These benefits are subject to a weekly minimum and maximum. Each July 1, the minimum and maximum weekly benefits are updated based on Iowa's most recent state average weekly wage. The latest increase in Iowa's state average weekly wage is estimated to increase the total indemnity costs by 0.1% and overall system costs by a negligible amount.

Expenses

The proposed advisory rates include a provision for workers compensation expenses. The following provides detail on the expense provisions accounted for in the advisory rates.

Loss-Based Expenses

The proposed advisory rates include a provision for loss adjustment expenses (LAE). These are expenses associated with the handling of workers compensation claims. LAE is included in the rates by using a ratio of loss adjustment expense dollars to loss dollars (called the LAE provision). In this filing, NCCI is proposing to increase the current LAE provision from 15.4% to 15.7% of losses. Please see Exhibit II for additional detail.

Production and General Expense

The proposed advisory rates include a provision for production expenses (including commissions) and general expenses.

The current provision in the advisory rates for production expense is 18.3% of premium. This filing proposes an increase in this provision to 18.5%.

The current provision in the advisory rates for general expenses is 5.0% of premium. This filing proposes maintaining the provision of 5.0%.

The overall advisory rate change due to the proposed production and general expense provisions is an increase of 0.3%.

Premium Taxes and Assessments

This filing proposes a decrease to the current approved provisions for taxes and assessments. The current provision in the rates for taxes and assessments is 2.3% of premium; the proposed provision is 2.2% of premium. The breakdown of the proposed provision is shown below:

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Selections Underlying the Proposed Changes

Premium Tax	1.0%
Second Injury Fund	0.9%
Miscellaneous	0.3%
Taxes and Assessments	2.2%

Profit and Contingency Provision

By law, Iowa's advisory rates must be determined such that Iowa's workers compensation insurers can be expected to earn a return that is adequate, fair and not excessive. Analysis and determination of a profit and contingency provision is necessary to ensure this premise is maintained.

Current advisory rates contain a profit and contingency of 0.0%. Based upon the results from its latest internal rate of return model, NCCI is proposing to decrease the profit and contingency provision in this rate filing to –0.5%. The overall rate change due to the proposed profit and contingency provision is a decrease of 0.7%.

Assigned Risk Market

As previously mentioned, an overall average decrease of 9.2% to the current assigned risk rate level is being proposed effective January 1, 2019.

A number of Assigned Risk programs have been instituted in Iowa. These programs help to assure that the assigned risk market is self-funding. This means that the premium collected in the assigned risk market should pay for losses generated by employers in that market. These programs also encourage employers in the assigned risk market to seek coverage in the voluntary market. They are listed below:

Assigned Risk Program	Effective Date
Removal of Assigned Risk Premium Discounts	04/16/1987
Take-out Credit Program	01/01/1992
Assigned Risk Adjustment Program (ARAP)	07/01/1992
Assigned Risk Differential (Increased to 1.30)	01/01/2014

In this filing, there are no changes proposed to the current assigned risk pricing programs.

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Additional Proposed Changes

Classification Ratemaking – Revised Credibility Parameters

This filing proposes an update to the parameters of the credibility formulas used in the calculation of derived by formula pure premiums (see Appendix B-I), which are used in the calculation of rates. The proposed changes to the credibility formulas are expected to significantly increase the stability of classification rates—particularly for those classifications with low volume of observed experience—while also seeking to improve the level of predictive accuracy.

To achieve enhanced year-to-year stability, NCCI is proposing to revise the credibility parameters according to the following tables:

Indicated (State) Pure Premium Credibility Formula

	Previous Filing	Proposed Filing
Basis for credibility	Expected losses	Expected losses
Exponent	0.40	0.50
Full credibility standard:		
- Indemnity	850 x average indemnity severity for lost-time claims	1,700 x average indemnity severity for lost-time claims
- Medical	400 x average medical severity for lost-time claims	800 x average medical severity for lost-time claims

National Pure Premium Credibility Formula

	Previous Filing	Proposed Filing
Basis for credibility	Actual lost-time claims	Actual lost-time claims
Exponent	0.40	0.50
Full credibility standard:		
- Indemnity	1,150 lost-time claims	2,300 lost-time claims
- Medical	1,000 lost-time claims	2,000 lost-time claims
Limitation of National Pure Premium Credibility	0.5 x (1 – state credibility)	0.5 x (1 – state credibility)

Additionally, state special classifications that exist in a minimal number of states will no longer include a national component in the ratemaking process.

Present On Rate Level Pure Premium Credibility Formula

There is no change to the credibility formula for the present on rate level pure premium, which will continue to receive the residual credibility (100% minus the sum of the state and national credibilities).

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Additional Proposed Changes

Background

As explained in Appendix B-I of this filing, the classification rates are derived using a three-way credibility weighting of the indicated, present on rate level, and national pure premiums. The formulas used to produce the credibility weights for each classification were derived in the early 1990s using a method based on limited fluctuation credibility theory. At its core, limited fluctuation credibility theory seeks to limit the extent to which random fluctuations in classification experience can influence final rates.

When the Likely/Not-Likely class ratemaking methodology was first implemented, NCCI incorporated several major revisions to its classification ratemaking methodology designed to improve the predictive accuracy and year-to-year stability of classification rates. Among these revisions were updates to the parameters of the credibility formulas which had previously remained unchanged since the early 1990s. When developing the revised credibility parameters, consideration was given to the following:

- An update to the limited fluctuation approach to credibility with the most recently available data indicated that reductions to classification credibilities may be appropriate.
- While newly-implemented updates to NCCI's classification ratemaking methodology (e.g., incorporating likely and not-likely loss development groupings and including an expected excess provision after limiting large claims to $500,000) were expected to result in significantly enhanced accuracy and stability, they suggested increases to classification credibilities may be appropriate.

At that time, to balance these concerns, NCCI revised the credibility parameters without introducing significant changes to the actual classification credibility percentages used. It was NCCI's intent to further recalibrate the credibility parameters when a sufficient volume of pure premium data based on the revised classification methodology became available to achieve increased year-to-year stability of rates.

NCCI has recently concluded a multi-year analysis of its class ratemaking methodologies, which focused on the stability of small classes. When conducting this research, NCCI re-estimated historical classification derived by formula pure premiums using alternatives to the current methodology. This research resulted in NCCI investigating updates to the parameters of the credibility formulas used in the calculation of derived by formula pure premiums.

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Additional Proposed Changes

Methodology

During the multi-year analysis of its class ratemaking methodologies, NCCI refreshed the limited fluctuation approach to credibility using the latest pure premium data from all jurisdictions for which the full history of likely/not-likely filings was available.

The first task was to estimate the exponent of the credibility formula indicated by the most recent pure premium data. To accomplish this task, sample coefficients of variation were derived and a linear model was fit. The exponent of the credibility formula indicated by the most recent pure premium data is the (negative of the) fitted slope of the linear model.

The second task was to estimate the full credibility standard. Limited fluctuation credibility theory suggests that as the size of a class increases, the random fluctuation of the class pure premium decreases. However, some minimal level of random fluctuation is likely to persist for even the largest classes. Based on the linear model, the full credibility standard was determined after recognizing this minimum level of random fluctuation along with the targeted level of pure premium fluctuation in the losses with which credibility is to be calibrated, and the probability that this level of fluctuation will be achieved.

In addition to relying on limited fluctuation credibility theory to calibrate the parameters of the credibility formulas, several performance testing metrics were utilized—which focused on the stability or accuracy of the alternative classification pure premiums. These metrics were used to distinguish between the various alternatives and to guide the selection of updated parameters to the credibility formulas.

Ultimately, selections were made for both the exponent of the credibility formula and the full credibility standard. These selections required judgment and considered both the linear model and the performance test results. The final credibility parameters being proposed accomplished the goal of stabilizing the small classes and were shown to achieve excellent performance results based on the tests performed.

Impact

These class ratemaking methodology changes will impact individual class rates, but will not impact the state's overall average rate level indication—since the individual classification code changes must balance to the overall average statewide change. These changes are expected to result in increased class equity and stability. Any specific class code impacts will be subject to NCCI's current class ratemaking procedures (swing limits, credibility-weighted average of indicated, national, and present-on-rate level, etc.).

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Additional Proposed Changes

Updates to Retrospective Rating

Changes to Retrospective Rating Plan Manual Pages

Due to the replacement of Table M within Item R-1414 effective January 1, 2019, State Hazard Group Differentials and the Table of Expected Loss Ranges are no longer needed to calculate retrospective rating premium. These values have been removed from the Retrospective Rating Plan Manual pages.

If a carrier has elected to calculate net aggregate loss factors using the new Table of Aggregate Loss Factors, the expected number of claims for the policy must be determined. To aid in deriving the expected number of claims, the average cost per case values that underlie the ELFs and ELAEFs are now included on the Retrospective Rating Plan Manual pages.

Update to Retrospective Development Factor Methodology

This filing proposes an enhancement to NCCI's methodology of calculating Retrospective Development Factors which are shown on the Retrospective Rating Plan Manual pages. In retrospective rating plans, retrospective development premium is an optional element that stabilizes premium adjustments by anticipating that losses typically develop upwards over time.

To calculate Retrospective Development Factors at each adjustment, total loss development factors are needed by report. Under NCCI's current methodology, total loss development factors are estimated by weighting together injury type-specific development factors by their losses from the corresponding policy period. Losses by injury type, particularly permanent total (PT) losses, may be volatile from one policy period to the next. To reduce the potential for large fluctuations year to year, NCCI proposes to use information from five policy periods to weight the injury type-specific development factors. This enhancement increases the stability of the total loss development factors and consequently the Retrospective Development Factors.

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Part 2 Proposed Values

- Proposed Voluntary Market Advisory Rates and Rating Values
- Proposed Assigned Risk Rates and Rating Values
- Proposed Values for Inclusion in the Experience Rating Plan Manual
- Proposed Values for Inclusion in the Retrospective Rating Plan Manual

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Proposed Voluntary Market Advisory Rates and Rating Values

The following pages include proposed voluntary market advisory rates and rating values:

- Voluntary market advisory rates, minimum premiums, expected loss rates, and d-ratios by class code, along with associated footnotes

- Advisory miscellaneous values, such as:

    - Maximum and minimum weekly payroll applicable for select class codes
    - Premium determination for Partners and Sole Proprietors
    - Catastrophe and Terrorism advisory voluntary rates
    - United States Longshore and Harbor Workers' Compensation Coverage Percentage

Effective January 1, 2019

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
0005	3.83	581	2.24	0.32	2016	4.89	698	2.97	0.35	2710	11.26	1000	5.49	0.23
0008	3.60	556	2.00	0.29	2021	2.67	454	1.49	0.29	2714	5.84	802	3.53	0.35
0016	6.48	500	3.38	0.26	2039	3.65	562	2.21	0.35	2731	4.54	659	2.37	0.26
0034	5.25	650	3.08	0.32	2041	5.70	787	3.45	0.35	2735	6.03	823	3.63	0.36
0035	3.50	545	2.11	0.35	2065	2.51	436	1.48	0.32	2759	7.21	953	4.35	0.35
0036	4.08	500	2.39	0.32	2070	5.83	801	3.42	0.32	2790	2.10	391	1.27	0.36
0037	3.95	500	2.20	0.29	2081	3.83	581	2.25	0.32	2797	8.74	1000	5.12	0.32
0042	7.07	650	3.94	0.29	2089	4.62	668	2.71	0.32	2799	7.66	1000	4.27	0.29
0050	7.33	966	4.29	0.32	2095	3.62	558	2.12	0.32	2802	5.58	774	3.11	0.29
0059D	0.47	–	0.11	0.26	2105	4.52	657	2.73	0.36	2835	3.42	536	2.17	0.44
0065D	0.11	–	0.03	0.26	2110	3.02	492	1.82	0.35	2836	3.42	536	2.17	0.44
0066D	0.11	–	0.03	0.26	2111	4.05	606	2.45	0.35	2841	5.31	744	3.20	0.36
0067D	0.11	–	0.03	0.26	2112	5.20	732	3.14	0.36	2881	4.16	618	2.64	0.44
0079	3.87	586	2.02	0.26	2114	4.17	619	2.52	0.36	2883	3.93	592	2.30	0.32
0083	5.90	500	3.46	0.32	2121	1.82	360	1.07	0.32	2913	–	–	2.30	0.32
0106	10.38	1000	5.07	0.23	2130	2.32	415	1.36	0.32	2915	4.29	632	2.39	0.29
0113	4.25	628	2.49	0.32	2131	2.81	469	1.65	0.32	2916	4.78	686	2.34	0.23
0170	3.12	503	1.83	0.32	2143	2.73	460	1.65	0.35	2923	2.87	476	1.73	0.35
0251	3.69	566	2.16	0.32	2157	5.03	713	2.95	0.32	2942	–	–	1.02	0.44
0400	–	–	1.35	0.29	2172	2.24	406	1.25	0.29	2960	5.63	779	3.30	0.32
0401	12.30	A	6.01	0.23	2174	3.66	563	2.21	0.35	3004	2.18	400	1.14	0.26
0771N	0.73	–	–	–	2211	10.00	1000	5.23	0.26	3018	3.50	545	1.83	0.26
0908P	177.00	337	103.66	0.32	2220	2.93	482	1.72	0.32	3022	4.83	691	2.92	0.35
0913P	494.00	654	289.73	0.32	2286	2.05	386	1.24	0.35	3027	4.06	607	2.12	0.26
0917	5.99	819	3.62	0.35	2288	4.89	698	2.95	0.35	3028	3.31	524	1.94	0.32
1005	6.50	875	2.93	0.22	2300	–	–	1.95	0.32	3030	7.07	938	3.70	0.26
1016X	13.87	1000	6.25	0.22	2302	2.27	410	1.33	0.32	3040	6.56	882	3.43	0.26
1164D	4.52	657	2.00	0.22	2305	2.71	458	1.51	0.29	3041	6.52	877	3.82	0.32
1165D	3.77	575	1.83	0.23	2361	2.76	464	1.61	0.32	3042	4.71	678	2.63	0.29
1320	1.88	367	0.92	0.23	2362	2.32	415	1.35	0.32	3064	6.24	846	3.66	0.32
1322	8.16	1000	4.00	0.23	2380	2.61	447	1.53	0.32	3069	–	–	2.58	0.32
1430	6.67	894	3.49	0.26	2386	–	–	1.95	0.32	3076	4.40	644	2.58	0.32
1438	6.13	834	3.00	0.23	2388	1.93	372	1.16	0.36	3081D	9.21	1000	4.72	0.26
1452	2.61	447	1.37	0.26	2402	3.50	545	1.83	0.26	3082D	5.41	755	2.80	0.26
1463	24.32	1000	11.91	0.23	2413	3.25	518	1.90	0.32	3085D	6.63	889	3.41	0.26
1472	4.11	612	2.01	0.23	2416	2.61	447	1.53	0.32	3110	7.82	1000	4.58	0.32
1624D	4.79	687	2.32	0.23	2417	1.55	331	0.91	0.32	3111	2.96	486	1.73	0.32
1642	2.30	413	1.20	0.26	2501	3.34	527	1.95	0.32	3113	2.39	423	1.40	0.32
1654	4.82	690	2.53	0.26	2503	1.86	365	1.12	0.35	3114	4.08	609	2.39	0.32
1655	–	–	1.20	0.26	2534	–	–	1.95	0.32	3118	2.32	415	1.40	0.35
1699	4.42	646	2.31	0.26	2570	5.80	798	3.50	0.35	3119	1.10	281	0.70	0.44
1701	3.99	599	2.09	0.26	2585	4.45	650	2.69	0.35	3122	2.35	419	1.42	0.36
1710D	4.14	615	2.14	0.26	2586	3.27	520	1.91	0.32	3126	3.54	549	2.08	0.32
1741	–	–	2.09	0.26	2587	2.30	413	1.39	0.35	3131	2.39	423	1.40	0.32
1747	3.43	537	1.80	0.26	2589	3.74	571	2.19	0.32	3132	3.54	549	2.07	0.32
1748	6.75	903	3.52	0.26	2600	4.89	698	2.96	0.35	3145	2.33	416	1.36	0.32
1803D	11.06	1000	5.19	0.23	2623	9.48	1000	5.28	0.29	3146	3.01	491	1.76	0.32
1852	–	–	1.22	0.22	2651	2.42	426	1.46	0.35	3169	3.33	526	1.95	0.32
1853	–	–	2.09	0.26	2660	2.70	457	1.63	0.35	3175	–	–	1.95	0.32
1860	–	–	1.46	0.32	2670	2.22	404	1.41	0.44	3179	2.96	486	1.79	0.35
1924	3.05	496	1.85	0.35	2683	2.78	466	1.67	0.36	3180	3.27	520	1.97	0.36
1925	5.75	793	3.19	0.29	2688	4.94	703	2.98	0.36	3188	2.88	477	1.74	0.35
2002	3.04	494	1.83	0.35	2701	15.37	1000	8.04	0.26	3220	2.30	413	1.35	0.32
2003	5.37	751	3.15	0.33	2702	21.13	1000	9.49	0.22	3223	–	–	1.97	0.36
2014	5.87	806	3.07	0.26	2709	11.78	1000	6.17	0.26	3224	4.17	619	2.53	0.35

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
3227	4.71	678	2.84	0.36	4034	9.71	1000	5.08	0.26	4665	8.86	1000	4.64	0.26
3240	4.48	653	2.69	0.36	4036	3.40	534	1.78	0.26	4670	9.98	1000	5.21	0.26
3241	3.88	587	2.27	0.32	4038	3.39	533	2.16	0.44	4683	5.47	762	3.22	0.33
3255	2.88	477	1.83	0.44	4053	–	–	1.65	0.32	4686	2.61	447	1.36	0.26
3257	3.77	575	2.21	0.32	4061	–	–	1.65	0.32	4692	0.81	249	0.49	0.35
3270	3.07	498	1.80	0.32	4062	2.82	470	1.65	0.32	4693	1.90	369	1.11	0.32
3300	5.35	749	3.13	0.32	4101	4.42	646	2.45	0.29	4703	2.70	457	1.58	0.32
3303	3.51	546	2.12	0.36	4109	0.66	233	0.40	0.35	4717	1.95	375	1.24	0.44
3307	4.17	619	2.44	0.32	4110	0.84	252	0.49	0.32	4720	3.19	511	1.87	0.32
3315	4.69	676	2.84	0.35	4111	1.98	378	1.20	0.35	4740	1.75	353	0.92	0.26
3334	3.30	523	1.94	0.33	4113	–	–	1.20	0.35	4741	3.33	526	1.95	0.32
3336	3.82	580	2.00	0.26	4114	3.05	496	1.79	0.32	4751	6.90	919	3.58	0.26
3365	5.97	817	3.13	0.26	4130	4.02	602	2.35	0.32	4771N	4.16	698	1.87	0.22
3372	5.18	730	2.88	0.29	4131	5.95	815	3.59	0.36	4777	4.28	631	1.92	0.22
3373	6.00	820	3.51	0.32	4133	2.76	464	1.66	0.36	4825	1.58	334	0.83	0.26
3383	1.92	371	1.16	0.35	4149	0.97	267	0.61	0.44	4828	2.68	455	1.50	0.29
3385	1.01	271	0.61	0.35	4206	3.51	546	2.06	0.32	4829	1.36	310	0.67	0.23
3400	2.96	486	1.65	0.29	4207	3.53	548	1.85	0.26	4902	3.76	574	2.27	0.35
3507	4.52	657	2.65	0.32	4239	2.99	489	1.57	0.26	4923	1.36	310	0.80	0.32
3515	3.16	508	1.85	0.32	4240	4.37	641	2.64	0.36	5020	6.61	887	3.46	0.26
3548	1.56	332	0.92	0.32	4243	2.70	457	1.58	0.32	5022	8.88	1000	4.35	0.23
3559	4.86	695	2.84	0.32	4244	3.34	527	1.96	0.32	5037	29.42	1000	13.20	0.22
3574	1.67	344	1.01	0.35	4250	2.70	457	1.58	0.32	5040	13.21	1000	5.95	0.22
3581	1.26	299	0.76	0.35	4251	3.22	514	1.89	0.32	5057	6.30	853	2.83	0.22
3612	2.50	435	1.39	0.29	4263	3.66	563	2.15	0.32	5059	20.31	1000	9.12	0.22
3620	4.51	656	2.36	0.26	4273	2.97	487	1.74	0.32	5069	–	–	9.12	0.22
3629	3.01	491	1.81	0.36	4279	2.48	433	1.46	0.32	5102	7.10	941	3.47	0.23
3632	3.77	575	2.10	0.29	4282	–	–	1.46	0.32	5146	4.96	706	2.60	0.26
3634	2.45	430	1.49	0.35	4283	2.15	397	1.26	0.32	5160	6.18	840	3.04	0.23
3635	3.42	536	2.00	0.32	4299	2.48	433	1.50	0.35	5183	3.26	519	1.71	0.26
3638	2.32	415	1.40	0.36	4304	5.70	787	3.18	0.29	5188	4.45	650	2.33	0.26
3642	3.14	505	1.84	0.32	4307	2.47	432	1.57	0.44	5190	3.05	496	1.60	0.26
3643	2.71	458	1.59	0.32	4351	1.26	299	0.74	0.32	5191	0.93	262	0.55	0.32
3647	3.79	577	2.11	0.29	4352	1.89	368	1.14	0.36	5192	3.16	508	1.85	0.32
3648	2.13	394	1.29	0.36	4360	1.29	302	0.78	0.35	5213	9.06	1000	4.44	0.23
3681	1.29	302	0.78	0.36	4361	1.21	293	0.73	0.35	5215	6.67	894	3.72	0.29
3685	1.89	368	1.14	0.35	4410	3.25	518	1.91	0.32	5221	5.34	747	2.80	0.26
3719	1.25	298	0.56	0.22	4420	7.47	982	3.67	0.23	5222	15.70	1000	7.68	0.23
3724	5.43	757	2.66	0.23	4431	1.96	376	1.25	0.44	5223	6.83	911	3.58	0.26
3726	4.98	708	2.24	0.22	4432	1.61	337	1.02	0.44	5348	6.86	915	3.60	0.26
3803	3.02	492	1.77	0.32	4439	–	–	1.54	0.32	5402	4.58	664	2.77	0.35
3807	4.19	621	2.53	0.35	4452	4.12	613	2.41	0.32	5403	11.07	1000	5.41	0.23
3808	4.09	610	2.29	0.29	4459	3.45	540	2.02	0.32	5437	6.53	878	3.42	0.26
3821	6.65	892	3.70	0.29	4470	3.10	501	1.82	0.32	5443	4.22	624	2.48	0.32
3822	4.97	707	2.76	0.29	4484	4.06	607	2.38	0.32	5445	7.74	1000	3.79	0.23
3824	5.93	812	3.30	0.29	4493	3.71	568	2.17	0.32	5462	7.98	1000	4.18	0.26
3826	1.18	290	0.69	0.32	4511	0.89	258	0.49	0.29	5472	6.97	927	3.13	0.22
3827	2.68	455	1.49	0.29	4557	2.67	454	1.61	0.35	5473	9.29	1000	4.17	0.22
3830	1.44	318	0.80	0.29	4558	2.64	450	1.54	0.32	5474	6.09	830	2.99	0.23
3851	3.14	505	1.90	0.35	4568	2.59	445	1.36	0.26	5478	5.40	754	2.83	0.26
3865	1.90	369	1.21	0.44	4581	1.18	290	0.58	0.23	5479	6.47	872	3.61	0.29
3881	5.87	806	3.44	0.32	4583	5.43	757	2.66	0.23	5480	10.68	1000	5.22	0.23
4000	8.90	1000	4.35	0.23	4611	1.27	300	0.77	0.35	5491	2.04	384	1.00	0.23
4021	6.06	827	3.17	0.26	4635	3.85	584	1.73	0.22	5506	8.29	1000	3.73	0.22
4024D	7.88	1000	4.08	0.26	4653	1.75	353	1.06	0.35	5507	4.33	636	2.12	0.23

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
5508D	12.12	1000	6.32	0.26	7047M	13.61	1000	5.70	0.22	7710	43.99	1000	21.53	0.23
5535	6.67	894	3.49	0.26	7050M	12.76	1000	5.31	0.21	7711	43.99	1000	21.53	0.23
5537	4.78	686	2.50	0.26	7090M	6.99	929	3.12	0.21	7720	3.32	525	1.74	0.26
5551	19.51	1000	8.75	0.22	7098M	13.97	1000	6.28	0.22	7855	4.71	678	2.46	0.26
5606	1.54	329	0.75	0.23	7099M	25.50	1000	10.69	0.22	8001	2.24	406	1.35	0.36
5610	6.57	883	3.86	0.32	7133	2.50	435	1.22	0.23	8002	2.70	457	1.58	0.32
5645	10.39	1000	5.08	0.23	7151M	3.04	494	1.49	0.23	8006	2.88	477	1.69	0.32
5703	13.12	1000	6.86	0.26	7152M	6.16	838	2.80	0.23	8008	1.26	299	0.76	0.36
5705	17.76	1000	9.28	0.26	7153M	3.38	532	1.66	0.23	8010	2.10	391	1.27	0.36
5951	1.03	273	0.62	0.36	7219	7.85	1000	3.85	0.23	8013	0.45	210	0.26	0.32
6003	5.81	799	3.05	0.26	7222	7.09	940	3.72	0.26	8015	1.00	270	0.59	0.32
6005	4.52	657	2.37	0.26	7225	8.04	1000	4.22	0.26	8017	1.93	372	1.17	0.36
6017	–	–	4.44	0.23	7228	–	–	3.85	0.23	8018	3.42	536	2.06	0.35
6018	2.58	444	1.36	0.27	7229	–	–	3.85	0.23	8021	2.70	457	1.58	0.32
6045	3.95	595	2.08	0.27	7230	10.34	1000	5.77	0.29	8031	3.19	511	1.87	0.32
6204	10.80	1000	5.28	0.23	7231	9.90	1000	5.53	0.29	8032	2.17	399	1.31	0.36
6206	3.11	502	1.40	0.22	7232	8.47	1000	4.16	0.23	8033	1.50	325	0.87	0.32
6213	1.95	375	0.95	0.23	7309F	18.11	1000	6.13	0.19	8037	2.16	398	1.30	0.35
6214	2.34	417	1.05	0.22	7313F	5.62	778	1.90	0.19	8039	1.51	326	0.91	0.36
6216	6.39	863	2.88	0.22	7317F	12.64	1000	4.25	0.19	8044	2.95	485	1.64	0.29
6217	5.10	721	2.50	0.23	7327F	29.95	1000	10.16	0.19	8045	0.71	238	0.43	0.35
6229	5.58	774	2.73	0.23	7333M	9.65	1000	4.37	0.23	8046	2.68	455	1.57	0.32
6233	2.77	465	1.36	0.23	7335M	10.72	1000	4.85	0.23	8047	1.16	288	0.70	0.35
6235	6.24	846	2.81	0.22	7337M	19.56	1000	8.25	0.23	8058	2.68	455	1.57	0.32
6236	8.55	1000	4.48	0.26	7350F	15.38	1000	5.48	0.21	8072	0.68	235	0.41	0.36
6237	1.82	360	0.96	0.26	7360	4.68	675	2.45	0.26	8102	2.15	397	1.30	0.35
6251D	9.84	1000	4.82	0.23	7370	5.46	761	3.19	0.32	8103	2.43	427	1.35	0.29
6252D	3.99	599	1.78	0.22	7380	5.15	727	2.88	0.29	8105	–	–	2.06	0.35
6260	–	–	4.82	0.23	7382	4.65	672	2.72	0.32	8106	6.83	911	3.57	0.26
6306	5.64	780	2.76	0.23	7390	4.96	706	2.90	0.32	8107	3.71	568	1.95	0.26
6319	3.68	565	1.80	0.23	7394M	3.88	587	1.74	0.22	8111	2.65	452	1.56	0.32
6325	4.84	692	2.37	0.23	7395M	4.31	634	1.94	0.22	8116	2.75	463	1.61	0.32
6400	6.54	879	3.65	0.29	7398M	7.87	1000	3.30	0.22	8203	9.05	1000	5.30	0.32
6503	2.45	430	1.48	0.35	7402	0.32	195	0.19	0.32	8204	5.63	779	2.94	0.26
6504	2.90	479	1.75	0.35	7403	4.34	637	2.27	0.26	8209	4.80	688	2.81	0.32
6702M*	5.72	789	3.00	0.26	7405N	1.35	389	0.71	0.26	8215	3.88	587	2.03	0.26
6703M*	11.61	1000	5.65	0.26	7420	6.78	906	3.06	0.22	8227	4.27	630	1.92	0.22
6704M*	6.36	860	3.33	0.26	7421	0.75	243	0.37	0.23	8232	5.70	787	2.98	0.26
6801F	5.90	809	2.19	0.24	7422	1.76	354	0.80	0.22	8233	2.84	472	1.49	0.27
6811	5.91	810	3.09	0.26	7425	3.71	568	1.67	0.22	8235	4.97	707	2.91	0.32
6824F	11.13	1000	4.00	0.20	7431N	0.93	317	0.42	0.22	8263	6.30	853	3.50	0.29
6826F	9.91	1000	3.61	0.25	7445N	0.73	–	–	–	8264	7.02	932	3.66	0.26
6834	4.93	702	2.74	0.29	7453N	0.50	–	–	–	8265	6.85	914	3.34	0.23
6836	5.19	731	2.71	0.26	7502	2.44	428	1.28	0.26	8279	7.58	994	3.70	0.23
6843F	15.66	1000	5.32	0.18	7515	1.12	283	0.50	0.22	8288	6.89	918	3.59	0.26
6845F	8.56	1000	2.88	0.19	7520	4.25	628	2.49	0.32	8291	4.39	643	2.45	0.29
6854	6.53	878	2.93	0.22	7538	5.13	724	2.31	0.22	8292	4.11	612	2.41	0.32
6872F	16.28	1000	5.48	0.19	7539	2.62	448	1.28	0.23	8293	10.80	1000	5.66	0.26
6874F	25.73	1000	8.65	0.19	7540	3.59	555	1.61	0.22	8304	5.34	747	2.79	0.26
6882	4.59	665	2.06	0.22	7580	2.26	409	1.18	0.26	8350	6.07	828	2.97	0.23
6884	7.22	954	3.26	0.22	7590	3.75	573	2.09	0.29	8380	2.84	472	1.58	0.29
7016M	6.71	898	3.01	0.22	7600	3.78	576	1.98	0.26	8381	2.44	428	1.36	0.29
7024M	7.46	981	3.35	0.22	7605	2.22	404	1.16	0.26	8385	2.47	432	1.29	0.26
7038M	6.29	852	2.81	0.21	7610	0.66	233	0.37	0.29	8392	2.29	412	1.34	0.32
7046M	12.57	1000	5.65	0.22	7705	6.32	855	3.53	0.29	8393	2.02	382	1.19	0.32

* Refer to the Footnotes Page for additional information on this class code.

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO
8500	6.20	842	3.24	0.26
8601	0.50	215	0.28	0.29
8602	2.04	384	1.14	0.29
8603	0.10	171	0.06	0.32
8606	2.34	417	1.15	0.23
8709F	7.80	1000	2.63	0.19
8719	2.75	463	1.23	0.22
8720	1.07	278	0.56	0.26
8721	0.42	206	0.22	0.26
8723	0.22	184	0.13	0.32
8725	2.82	470	1.48	0.26
8726F	3.49	544	1.30	0.24
8734M	0.63	229	0.33	0.26
8737M	0.57	223	0.30	0.26
8738M	1.16	288	0.55	0.26
8742	0.47	212	0.24	0.26
8745	5.00	710	2.79	0.29
8748	0.83	251	0.46	0.29
8755	0.38	202	0.20	0.26
8799	0.61	227	0.36	0.32
8800	2.16	398	1.37	0.44
8803	0.09	170	0.05	0.26
8805M	0.30	193	0.17	0.32
8810	0.22	184	0.13	0.32
8814M	0.27	190	0.15	0.32
8815M	0.54	219	0.30	0.32
8820	0.22	184	0.12	0.29
8824	3.18	510	1.92	0.35
8825	2.39	423	1.52	0.44
8826	2.74	461	1.60	0.32
8829	2.51	436	1.47	0.32
8831	1.55	331	0.91	0.32
8832	0.42	206	0.25	0.32
8833	0.95	265	0.56	0.32
8835	2.50	435	1.47	0.32
8842	2.92	481	1.71	0.32
8855	0.17	179	0.10	0.32
8856	0.57	223	0.33	0.32
8864	1.89	368	1.11	0.32
8868	0.50	215	0.30	0.36
8869	1.22	294	0.74	0.36
8871	0.09	170	0.05	0.36
8901	0.28	191	0.15	0.29
9012	1.95	375	1.09	0.29
9014	4.01	601	2.35	0.32
9015	4.26	629	2.50	0.32
9016	3.43	537	2.00	0.32
9019	2.46	431	1.28	0.26
9033	2.53	438	1.48	0.32
9040	3.61	557	2.18	0.35
9044	1.45	320	0.88	0.36
9052	2.34	417	1.41	0.36
9058	1.71	348	1.09	0.44
9060	1.68	345	1.01	0.36
9061	1.55	331	0.99	0.44
9062	1.38	312	0.88	0.44
9063	1.06	277	0.64	0.36
9077F	5.51	766	2.16	0.30
9082	1.33	306	0.84	0.44
9083	1.44	318	0.91	0.44
9084	1.51	326	0.88	0.32
9088a	a	a	a	a
9089	1.61	337	0.97	0.36
9093	1.72	349	1.04	0.36
9101	5.31	744	3.20	0.36
9102	3.68	565	2.15	0.32
9154	1.74	351	1.01	0.32
9156	2.61	447	1.45	0.29
9170	12.96	1000	5.80	0.22
9178	5.19	731	3.28	0.44
9179	18.34	1000	11.03	0.36
9180	6.13	834	3.20	0.26
9182	2.37	421	1.38	0.32
9186	14.76	1000	7.19	0.22
9220	5.51	766	3.07	0.29
9402	5.56	772	2.91	0.26
9403	8.22	1000	4.02	0.23
9410	2.84	472	1.66	0.32
9501	4.49	654	2.50	0.29
9505	5.49	764	3.06	0.29
9516	5.83	801	3.05	0.26
9519	4.16	618	2.18	0.26
9521	4.11	612	2.15	0.26
9522	5.04	714	2.96	0.32
9534	3.91	590	1.92	0.23
9554	9.23	1000	4.52	0.23
9586	0.56	222	0.36	0.44
9600	3.39	533	2.05	0.35
9620	1.33	306	0.74	0.29

CLASS CODE	RATE	MIN PREM	ELR	D RATIO

* Refer to the Footnotes Page for additional information on this class code.

FOOTNOTES

a Rate for each individual risk must be obtained from NCCI Customer Service or the Rating Organization having jurisdiction.

A Minimum Premium $100 per ginning location for policy minimum premium computation.

D Rate for classification already includes the specific disease loading shown in the table below. See ***Basic Manual*** Rule 3-A-7.

Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol
0059D	0.47	S	1624D	0.05	S	4024D	0.06	S
0065D	0.11	S	1710D	0.05	S	5508D	0.07	S
0066D	0.11	S	1803D	0.43	S	6251D	0.07	S
0067D	0.11	S	3081D	0.16	S	6252D	0.04	S
1164D	0.08	S	3082D	0.06	S			
1165D	0.05	S	3085D	0.11	S			

S=Silica

F Rate provides for coverage under the United States Longshore and Harbor Workers Compensation Act and its extensions. Rate includes a provision for USL&HW Assessment.

M Risks are subject to Admiralty Law or Federal Employers Liability Act (FELA). However, the published rate is for risks that voluntarily purchase standard workers compensation and employers liability coverage. A provision for the USL&HW Assessment is included for those classifications under Program II USL Act.

N This code is part of a ratable / non-ratable group shown below. The statistical non-ratable code and corresponding rate are applied in addition to the basic classification when determining premium.

Class Code	Non-Ratable Element Code
4771	0771
7405	7445
7431	7453

P Classification is computed on a per capita basis.

X Refer to special classification phraseology in these pages which is applicable in this state.

*** Class Codes with Specific Footnotes**

6702 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection code rate and elr each x 1.215.

6703 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate x 2.464 and elr x 2.298.

6704 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate and elr each x 1.35.

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MISCELLANEOUS VALUES

Basis of premium applicable in accordance with ***Basic Manual*** footnote instructions for Code 7370 -- "Taxicab Co.":

Employee operated vehicle	$68,800
Leased or rented vehicle	$45,900

Catastrophe (other than Certified Acts of Terrorism) - (Voluntary) 0.01

Expense Constant applicable in accordance with ***Basic Manual*** Rule 3-A-11 ..... $160

Maximum Weekly Payroll applicable in accordance with ***Basic Manual*** Rule 2-E -- "Executive Officers" including members of limited liability companies, Rule 2-E-3 for Partners and Sole Proprietors, and ***Basic Manual*** footnote instructions for Code 9178 -- "Athletic Sports or Park: Non-Contact Sports", and Code 9179 -- "Athletic Sports or Park: Contact Sports" $3,500

Minimum Weekly Payroll applicable in accordance with ***Basic Manual*** Rule 2-E -- "Executive Officers" and members of limited liability companies and Rule 2-E-3 for Partners and Sole Proprietors $450

Premium Discount Percentages - (See ***Basic Manual*** Rule 3-A-19-a.) The following premium discounts are applicable to Standard Premiums:

		Type A	Type B
First	$10,000	-	-
Next	190,000	9.1%	5.1%
Next	1,550,000	11.3%	6.5%
Over	1,750,000	12.3%	7.5%

Terrorism (Voluntary) 0.01

United States Longshore and Harbor Workers' Compensation Coverage Percentage applicable only in connection with ***Basic Manual*** Rule 3-A-4 ..... 107%

(Multiply a Non-F classification rate by a factor of 2.07 to adjust for differences in benefits and loss-based expenses. This factor is the product of the adjustment for differences in benefits (1.95) and the adjustment for differences in loss-based expenses (1.061).)

Experience Rating Eligibility

A risk qualifies for experience rating on an intrastate basis when it meets the premium eligibility requirements for the state in which it operates. The eligibility amount varies by rating effective date. The ***Experience Rating Plan Manual*** should be referenced for the latest approved eligibility amounts by state and by effective date.

Iowa

Workers Compensation Rate Filing – January 1, 2019

Proposed Assigned Risk Rates and Rating Values

The following pages include proposed assigned risk rates and rating values:

- Assigned risk rates, minimum premium, expected loss rates, and d-ratios by class code, along with associated footnotes

- Miscellaneous values, such as:

    - Maximum and minimum weekly payroll applicable for select class codes
    - Premium determination for Partners and Sole Proprietors
    - Catastrophe and Terrorism assigned risk rates
    - United States Longshore and Harbor Workers' Compensation Coverage Percentage

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APPLICABLE TO ASSIGNED RISK POLICIES ONLY

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
0005	4.98	650	2.24	0.32	2016	6.36	860	2.97	0.35	2710	14.64	1000	5.49	0.23
0008	4.68	650	2.00	0.29	2021	3.47	542	1.49	0.29	2714	7.59	995	3.53	0.35
0016	8.42	500	3.38	0.26	2039	4.75	683	2.21	0.35	2731	5.90	809	2.37	0.26
0034	6.83	650	3.08	0.32	2041	7.41	975	3.45	0.35	2735	7.84	1000	3.63	0.36
0035	4.55	650	2.11	0.35	2065	3.26	519	1.48	0.32	2759	9.37	1000	4.35	0.35
0036	5.30	500	2.39	0.32	2070	7.58	994	3.42	0.32	2790	2.73	460	1.27	0.36
0037	5.14	500	2.20	0.29	2081	4.98	708	2.25	0.32	2797	11.36	1000	5.12	0.32
0042	9.19	650	3.94	0.29	2089	6.01	821	2.71	0.32	2799	9.96	1000	4.27	0.29
0050	9.53	1000	4.29	0.32	2095	4.71	678	2.12	0.32	2802	7.25	958	3.11	0.29
0059D	0.61	–	0.11	0.26	2105	5.88	807	2.73	0.36	2835	4.45	650	2.17	0.44
0065D	0.14	–	0.03	0.26	2110	3.93	592	1.82	0.35	2836	4.45	650	2.17	0.44
0066D	0.14	–	0.03	0.26	2111	5.27	740	2.45	0.35	2841	6.90	919	3.20	0.36
0067D	0.14	–	0.03	0.26	2112	6.76	904	3.14	0.36	2881	5.41	755	2.64	0.44
0079	5.03	650	2.02	0.26	2114	5.42	756	2.52	0.36	2883	5.11	722	2.30	0.32
0083	7.67	500	3.46	0.32	2121	2.37	421	1.07	0.32	2913	–	–	2.30	0.32
0106	13.49	1000	5.07	0.23	2130	3.02	492	1.36	0.32	2915	5.58	774	2.39	0.29
0113	5.53	768	2.49	0.32	2131	3.65	562	1.65	0.32	2916	6.21	843	2.34	0.23
0170	4.06	607	1.83	0.32	2143	3.55	551	1.65	0.35	2923	3.73	570	1.73	0.35
0251	4.80	688	2.16	0.32	2157	6.54	879	2.95	0.32	2942	–	–	1.02	0.44
0400	–	–	1.35	0.29	2172	2.91	480	1.25	0.29	2960	7.32	965	3.30	0.32
0401	15.99	A	6.01	0.23	2174	4.76	684	2.21	0.35	3004	2.83	471	1.14	0.26
0771N	0.95	–	–	–	2211	13.00	1000	5.23	0.26	3018	4.55	661	1.83	0.26
0908P	230.00	390	103.66	0.32	2220	3.81	579	1.72	0.32	3022	6.28	851	2.92	0.35
0913P	642.00	802	289.73	0.32	2286	2.67	454	1.24	0.35	3027	5.28	741	2.12	0.26
0917	7.79	1000	3.62	0.35	2288	6.36	860	2.95	0.35	3028	4.30	633	1.94	0.32
1005	8.45	1000	2.93	0.22	2300	–	–	1.95	0.32	3030	9.19	1000	3.70	0.26
1016X	18.03	1000	6.25	0.22	2302	2.95	485	1.33	0.32	3040	8.53	1000	3.43	0.26
1164D	5.87	806	2.00	0.22	2305	3.52	547	1.51	0.29	3041	8.48	1000	3.82	0.32
1165D	4.91	700	1.83	0.23	2361	3.59	555	1.61	0.32	3042	6.12	833	2.63	0.29
1320	2.44	428	0.92	0.23	2362	3.02	492	1.35	0.32	3064	8.11	1000	3.66	0.32
1322	10.61	1000	4.00	0.23	2380	3.39	533	1.53	0.32	3069	–	–	2.58	0.32
1430	8.67	1000	3.49	0.26	2386	–	–	1.95	0.32	3076	5.72	789	2.58	0.32
1438	7.97	1000	3.00	0.23	2388	2.51	436	1.16	0.36	3081D	11.98	1000	4.72	0.26
1452	3.39	533	1.37	0.26	2402	4.55	661	1.83	0.26	3082D	7.04	934	2.80	0.26
1463	31.62	1000	11.91	0.23	2413	4.23	625	1.90	0.32	3085D	8.62	1000	3.41	0.26
1472	5.34	747	2.01	0.23	2416	3.39	533	1.53	0.32	3110	10.17	1000	4.58	0.32
1624D	6.23	845	2.32	0.23	2417	2.02	382	0.91	0.32	3111	3.85	584	1.73	0.32
1642	2.99	489	1.20	0.26	2501	4.34	637	1.95	0.32	3113	3.11	502	1.40	0.32
1654	6.27	850	2.53	0.26	2503	2.42	426	1.12	0.35	3114	5.30	743	2.39	0.32
1655	–	–	1.20	0.26	2534	–	–	1.95	0.32	3118	3.02	492	1.40	0.35
1699	5.75	793	2.31	0.26	2570	7.54	989	3.50	0.35	3119	1.43	317	0.70	0.44
1701	5.19	731	2.09	0.26	2585	5.79	797	2.69	0.35	3122	3.06	497	1.42	0.36
1710D	5.39	753	2.14	0.26	2586	4.25	628	1.91	0.32	3126	4.60	666	2.08	0.32
1741	–	–	2.09	0.26	2587	2.99	489	1.39	0.35	3131	3.11	502	1.40	0.32
1747	4.46	651	1.80	0.26	2589	4.86	695	2.19	0.32	3132	4.60	666	2.07	0.32
1748	8.78	1000	3.52	0.26	2600	6.36	860	2.96	0.35	3145	3.03	493	1.36	0.32
1803D	14.38	1000	5.19	0.23	2623	12.32	1000	5.28	0.29	3146	3.91	590	1.76	0.32
1852	–	–	1.22	0.22	2651	3.15	507	1.46	0.35	3169	4.33	636	1.95	0.32
1853	–	–	2.09	0.26	2660	3.51	546	1.63	0.35	3175	–	–	1.95	0.32
1860	–	–	1.46	0.32	2670	2.89	478	1.41	0.44	3179	3.85	584	1.79	0.35
1924	3.97	597	1.85	0.35	2683	3.61	557	1.67	0.36	3180	4.25	628	1.97	0.36
1925	7.48	983	3.19	0.29	2688	6.42	866	2.98	0.36	3188	3.74	571	1.74	0.35
2002	3.95	595	1.83	0.35	2701	19.98	1000	8.04	0.26	3220	2.99	489	1.35	0.32
2003	6.98	928	3.15	0.33	2702	27.47	1000	9.49	0.22	3223	–	–	1.97	0.36
2014	7.63	999	3.07	0.26	2709	15.31	1000	6.17	0.26	3224	5.42	756	2.53	0.35

* Refer to the Footnotes Page for additional information on this class code.

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CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
3227	6.12	833	2.84	0.36	4034	12.62	1000	5.08	0.26	4665	11.52	1000	4.64	0.26
3240	5.82	800	2.69	0.36	4036	4.42	646	1.78	0.26	4670	12.97	1000	5.21	0.26
3241	5.04	714	2.27	0.32	4038	4.41	645	2.16	0.44	4683	7.11	942	3.22	0.33
3255	3.74	571	1.83	0.44	4053	–	–	1.65	0.32	4686	3.39	533	1.36	0.26
3257	4.90	699	2.21	0.32	4061	–	–	1.65	0.32	4692	1.05	276	0.49	0.35
3270	3.99	599	1.80	0.32	4062	3.67	564	1.65	0.32	4693	2.47	432	1.11	0.32
3300	6.96	926	3.13	0.32	4101	5.75	793	2.45	0.29	4703	3.51	546	1.58	0.32
3303	4.56	662	2.12	0.36	4109	0.86	255	0.40	0.35	4717	2.54	439	1.24	0.44
3307	5.42	756	2.44	0.32	4110	1.09	280	0.49	0.32	4720	4.15	617	1.87	0.32
3315	6.10	831	2.84	0.35	4111	2.57	443	1.20	0.35	4740	2.28	411	0.92	0.26
3334	4.29	632	1.94	0.33	4113	–	–	1.20	0.35	4741	4.33	636	1.95	0.32
3336	4.97	707	2.00	0.26	4114	3.97	597	1.79	0.32	4751	8.97	1000	3.58	0.26
3365	7.76	1000	3.13	0.26	4130	5.23	735	2.35	0.32	4771N	5.41	860	1.87	0.22
3372	6.73	900	2.88	0.29	4131	7.74	1000	3.59	0.36	4777	5.56	772	1.92	0.22
3373	7.80	1000	3.51	0.32	4133	3.59	555	1.66	0.36	4825	2.05	386	0.83	0.26
3383	2.50	435	1.16	0.35	4149	1.26	299	0.61	0.44	4828	3.48	543	1.50	0.29
3385	1.31	304	0.61	0.35	4206	4.56	662	2.06	0.32	4829	1.77	355	0.67	0.23
3400	3.85	584	1.65	0.29	4207	4.59	665	1.85	0.26	4902	4.89	698	2.27	0.35
3507	5.88	807	2.65	0.32	4239	3.89	588	1.57	0.26	4923	1.77	355	0.80	0.32
3515	4.11	612	1.85	0.32	4240	5.68	785	2.64	0.36	5020	8.59	1000	3.46	0.26
3548	2.03	383	0.92	0.32	4243	3.51	546	1.58	0.32	5022	11.54	1000	4.35	0.23
3559	6.32	855	2.84	0.32	4244	4.34	637	1.96	0.32	5037	38.25	1000	13.20	0.22
3574	2.17	399	1.01	0.35	4250	3.51	546	1.58	0.32	5040	17.17	1000	5.95	0.22
3581	1.64	340	0.76	0.35	4251	4.19	621	1.89	0.32	5057	8.19	1000	2.83	0.22
3612	3.25	518	1.39	0.29	4263	4.76	684	2.15	0.32	5059	26.40	1000	9.12	0.22
3620	5.86	805	2.36	0.26	4273	3.86	585	1.74	0.32	5069	–	–	9.12	0.22
3629	3.91	590	1.81	0.36	4279	3.22	514	1.46	0.32	5102	9.23	1000	3.47	0.23
3632	4.90	699	2.10	0.29	4282	–	–	1.46	0.32	5146	6.45	870	2.60	0.26
3634	3.19	511	1.49	0.35	4283	2.80	468	1.26	0.32	5160	8.03	1000	3.04	0.23
3635	4.45	650	2.00	0.32	4299	3.22	514	1.50	0.35	5183	4.24	626	1.71	0.26
3638	3.02	492	1.40	0.36	4304	7.41	975	3.18	0.29	5188	5.79	797	2.33	0.26
3642	4.08	609	1.84	0.32	4307	3.21	513	1.57	0.44	5190	3.97	597	1.60	0.26
3643	3.52	547	1.59	0.32	4351	1.64	340	0.74	0.32	5191	1.21	293	0.55	0.32
3647	4.93	702	2.11	0.29	4352	2.46	431	1.14	0.36	5192	4.11	612	1.85	0.32
3648	2.77	465	1.29	0.36	4360	1.68	345	0.78	0.35	5213	11.78	1000	4.44	0.23
3681	1.68	345	0.78	0.36	4361	1.57	333	0.73	0.35	5215	8.67	1000	3.72	0.29
3685	2.46	431	1.14	0.35	4410	4.23	625	1.91	0.32	5221	6.94	923	2.80	0.26
3719	1.63	339	0.56	0.22	4420	9.71	1000	3.67	0.23	5222	20.41	1000	7.68	0.23
3724	7.06	937	2.66	0.23	4431	2.55	441	1.25	0.44	5223	8.88	1000	3.58	0.26
3726	6.47	872	2.24	0.22	4432	2.09	390	1.02	0.44	5348	8.92	1000	3.60	0.26
3803	3.93	592	1.77	0.32	4439	–	–	1.54	0.32	5402	5.95	815	2.77	0.35
3807	5.45	760	2.53	0.35	4452	5.36	750	2.41	0.32	5403	14.39	1000	5.41	0.23
3808	5.32	745	2.29	0.29	4459	4.49	654	2.02	0.32	5437	8.49	1000	3.42	0.26
3821	8.65	1000	3.70	0.29	4470	4.03	603	1.82	0.32	5443	5.49	764	2.48	0.32
3822	6.46	871	2.76	0.29	4484	5.28	741	2.38	0.32	5445	10.06	1000	3.79	0.23
3824	7.71	1000	3.30	0.29	4493	4.82	690	2.17	0.32	5462	10.37	1000	4.18	0.26
3826	1.53	328	0.69	0.32	4511	1.16	288	0.49	0.29	5472	9.06	1000	3.13	0.22
3827	3.48	543	1.49	0.29	4557	3.47	542	1.61	0.35	5473	12.08	1000	4.17	0.22
3830	1.87	366	0.80	0.29	4558	3.43	537	1.54	0.32	5474	7.92	1000	2.99	0.23
3851	4.08	609	1.90	0.35	4568	3.37	531	1.36	0.26	5478	7.02	932	2.83	0.26
3865	2.47	432	1.21	0.44	4581	1.53	328	0.58	0.23	5479	8.41	1000	3.61	0.29
3881	7.63	999	3.44	0.32	4583	7.06	937	2.66	0.23	5480	13.88	1000	5.22	0.23
4000	11.57	1000	4.35	0.23	4611	1.65	342	0.77	0.35	5491	2.65	452	1.00	0.23
4021	7.88	1000	3.17	0.26	4635	5.01	711	1.73	0.22	5506	10.78	1000	3.73	0.22
4024D	10.25	1000	4.08	0.26	4653	2.28	411	1.06	0.35	5507	5.63	779	2.12	0.23

* Refer to the Footnotes Page for additional information on this class code.

Effective January 1, 2019

APPLICABLE TO ASSIGNED RISK POLICIES ONLY

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
5508D	15.76	1000	6.32	0.26	7047M	17.69	1000	5.70	0.22	7710	57.19	1000	21.53	0.23
5535	8.67	1000	3.49	0.26	7050M	16.59	1000	5.31	0.21	7711	57.19	1000	21.53	0.23
5537	6.21	843	2.50	0.26	7090M	9.09	1000	3.12	0.21	7720	4.32	635	1.74	0.26
5551	25.36	1000	8.75	0.22	7098M	18.16	1000	6.28	0.22	7855	6.12	833	2.46	0.26
5606	2.00	380	0.75	0.23	7099M	33.15	1000	10.69	0.22	8001	2.91	480	1.35	0.36
5610	8.54	1000	3.86	0.32	7133	3.25	518	1.22	0.23	8002	3.51	546	1.58	0.32
5645	13.51	1000	5.08	0.23	7151M	3.95	595	1.49	0.23	8006	3.74	571	1.69	0.32
5703	17.06	1000	6.86	0.26	7152M	8.01	1000	2.80	0.23	8008	1.64	340	0.76	0.36
5705	23.09	1000	9.28	0.26	7153M	4.39	643	1.66	0.23	8010	2.73	460	1.27	0.36
5951	1.34	307	0.62	0.36	7219	10.21	1000	3.85	0.23	8013	0.59	225	0.26	0.32
6003	7.55	991	3.05	0.26	7222	9.22	1000	3.72	0.26	8015	1.30	303	0.59	0.32
6005	5.88	807	2.37	0.26	7225	10.45	1000	4.22	0.26	8017	2.51	436	1.17	0.36
6017	–	–	4.44	0.23	7228	–	–	3.85	0.23	8018	4.45	650	2.06	0.35
6018	3.35	529	1.36	0.27	7229	–	–	3.85	0.23	8021	3.51	546	1.58	0.32
6045	5.14	725	2.08	0.27	7230	13.44	1000	5.77	0.29	8031	4.15	617	1.87	0.32
6204	14.04	1000	5.28	0.23	7231	12.87	1000	5.53	0.29	8032	2.82	470	1.31	0.36
6206	4.04	604	1.40	0.22	7232	11.01	1000	4.16	0.23	8033	1.95	375	0.87	0.32
6213	2.54	439	0.95	0.23	7309F	23.54	1000	6.13	0.19	8037	2.81	469	1.30	0.35
6214	3.04	494	1.05	0.22	7313F	7.31	964	1.90	0.19	8039	1.96	376	0.91	0.36
6216	8.31	1000	2.88	0.22	7317F	16.43	1000	4.25	0.19	8044	3.84	582	1.64	0.29
6217	6.63	889	2.50	0.23	7327F	38.94	1000	10.16	0.19	8045	0.92	261	0.43	0.35
6229	7.25	958	2.73	0.23	7333M	12.55	1000	4.37	0.23	8046	3.48	543	1.57	0.32
6233	3.60	556	1.36	0.23	7335M	13.94	1000	4.85	0.23	8047	1.51	326	0.70	0.35
6235	8.11	1000	2.81	0.22	7337M	25.43	1000	8.25	0.23	8058	3.48	543	1.57	0.32
6236	11.12	1000	4.48	0.26	7350F	19.99	1000	5.48	0.21	8072	0.88	257	0.41	0.36
6237	2.37	421	0.96	0.26	7360	6.08	829	2.45	0.26	8102	2.80	468	1.30	0.35
6251D	12.79	1000	4.82	0.23	7370	7.10	941	3.19	0.32	8103	3.16	508	1.35	0.29
6252D	5.19	731	1.78	0.22	7380	6.70	897	2.88	0.29	8105	–	–	2.06	0.35
6260	–	–	4.82	0.23	7382	6.05	826	2.72	0.32	8106	8.88	1000	3.57	0.26
6306	7.33	966	2.76	0.23	7390	6.45	870	2.90	0.32	8107	4.82	690	1.95	0.26
6319	4.78	686	1.80	0.23	7394M	5.04	714	1.74	0.22	8111	3.45	540	1.56	0.32
6325	6.29	852	2.37	0.23	7395M	5.60	776	1.94	0.22	8116	3.58	554	1.61	0.32
6400	8.50	1000	3.65	0.29	7398M	10.23	1000	3.30	0.22	8203	11.77	1000	5.30	0.32
6503	3.19	511	1.48	0.35	7402	0.42	206	0.19	0.32	8204	7.32	965	2.94	0.26
6504	3.77	575	1.75	0.35	7403	5.64	780	2.27	0.26	8209	6.24	846	2.81	0.32
6702M*	7.44	978	3.00	0.26	7405N	1.76	458	0.71	0.26	8215	5.04	714	2.03	0.26
6703M*	15.09	1000	5.65	0.26	7420	8.81	1000	3.06	0.22	8227	5.55	771	1.92	0.22
6704M*	8.27	1000	3.33	0.26	7421	0.98	268	0.37	0.23	8232	7.41	975	2.98	0.26
6801F	7.67	1000	2.19	0.24	7422	2.29	412	0.80	0.22	8233	3.69	566	1.49	0.27
6811	7.68	1000	3.09	0.26	7425	4.82	690	1.67	0.22	8235	6.46	871	2.91	0.32
6824F	14.47	1000	4.00	0.20	7431N	1.21	365	0.42	0.22	8263	8.19	1000	3.50	0.29
6826F	12.88	1000	3.61	0.25	7445N	0.95	–	–	–	8264	9.13	1000	3.66	0.26
6834	6.41	865	2.74	0.29	7453N	0.65	–	–	–	8265	8.91	1000	3.34	0.23
6836	6.75	903	2.71	0.26	7502	3.17	509	1.28	0.26	8279	9.85	1000	3.70	0.23
6843F	20.36	1000	5.32	0.18	7515	1.46	321	0.50	0.22	8288	8.96	1000	3.59	0.26
6845F	11.13	1000	2.88	0.19	7520	5.53	768	2.49	0.32	8291	5.71	788	2.45	0.29
6854	8.49	1000	2.93	0.22	7538	6.67	894	2.31	0.22	8292	5.34	747	2.41	0.32
6872F	21.16	1000	5.48	0.19	7539	3.41	535	1.28	0.23	8293	14.04	1000	5.66	0.26
6874F	33.45	1000	8.65	0.19	7540	4.67	674	1.61	0.22	8304	6.94	923	2.79	0.26
6882	5.97	817	2.06	0.22	7580	2.94	483	1.18	0.26	8350	7.89	1000	2.97	0.23
6884	9.39	1000	3.26	0.22	7590	4.88	697	2.09	0.29	8380	3.69	566	1.58	0.29
7016M	8.72	1000	3.01	0.22	7600	4.91	700	1.98	0.26	8381	3.17	509	1.36	0.29
7024M	9.70	1000	3.35	0.22	7605	2.89	478	1.16	0.26	8385	3.21	513	1.29	0.26
7038M	8.18	1000	2.81	0.21	7610	0.86	255	0.37	0.29	8392	2.98	488	1.34	0.32
7046M	16.34	1000	5.65	0.22	7705	8.22	1000	3.53	0.29	8393	2.63	449	1.19	0.32

* Refer to the Footnotes Page for additional information on this class code.

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APPLICABLE TO ASSIGNED RISK POLICIES ONLY

CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO	CLASS CODE	RATE	MIN PREM	ELR	D RATIO
8500	8.06	1000	3.24	0.26	9062	1.79	357	0.88	0.44					
8601	0.65	232	0.28	0.29	9063	1.38	312	0.64	0.36					
8602	2.65	452	1.14	0.29	9077F	7.16	948	2.16	0.30					
8603	0.13	174	0.06	0.32	9082	1.73	350	0.84	0.44					
8606	3.04	494	1.15	0.23	9083	1.87	366	0.91	0.44					
8709F	10.14	1000	2.63	0.19	9084	1.96	376	0.88	0.32					
8719	3.58	554	1.23	0.22	9088a	a	a	a	a					
8720	1.39	313	0.56	0.26	9089	2.09	390	0.97	0.36					
8721	0.55	221	0.22	0.26	9093	2.24	406	1.04	0.36					
8723	0.29	192	0.13	0.32	9101	6.90	919	3.20	0.36					
8725	3.67	564	1.48	0.26	9102	4.78	686	2.15	0.32					
8726F	4.54	659	1.30	0.24	9154	2.26	409	1.01	0.32					
8734M	0.82	250	0.33	0.26	9156	3.39	533	1.45	0.29					
8737M	0.74	241	0.30	0.26	9170	16.85	1000	5.80	0.22					
8738M	1.51	326	0.55	0.26	9178	6.75	903	3.28	0.44					
8742	0.61	227	0.24	0.26	9179	23.84	1000	11.03	0.36					
8745	6.50	875	2.79	0.29	9180	7.97	1000	3.20	0.26					
8748	1.08	279	0.46	0.29	9182	3.08	499	1.38	0.32					
8755	0.49	214	0.20	0.26	9186	19.19	1000	7.19	0.22					
8799	0.79	247	0.36	0.32	9220	7.16	948	3.07	0.29					
8800	2.81	469	1.37	0.44	9402	7.23	955	2.91	0.26					
8803	0.12	173	0.05	0.26	9403	10.69	1000	4.02	0.23					
8805M	0.39	203	0.17	0.32	9410	3.69	566	1.66	0.32					
8810	0.29	192	0.13	0.32	9501	5.84	802	2.50	0.29					
8814M	0.35	199	0.15	0.32	9505	7.14	945	3.06	0.29					
8815M	0.70	237	0.30	0.32	9516	7.58	994	3.05	0.26					
8820	0.29	192	0.12	0.29	9519	5.41	755	2.18	0.26					
8824	4.13	614	1.92	0.35	9521	5.34	747	2.15	0.26					
8825	3.11	502	1.52	0.44	9522	6.55	881	2.96	0.32					
8826	3.56	552	1.60	0.32	9534	5.08	719	1.92	0.23					
8829	3.26	519	1.47	0.32	9554	12.00	1000	4.52	0.23					
8831	2.02	382	0.91	0.32	9586	0.73	240	0.36	0.44					
8832	0.55	221	0.25	0.32	9600	4.41	645	2.05	0.35					
8833	1.24	296	0.56	0.32	9620	1.73	350	0.74	0.29					
8835	3.25	518	1.47	0.32										
8842	3.80	578	1.71	0.32										
8855	0.22	184	0.10	0.32										
8856	0.74	241	0.33	0.32										
8864	2.46	431	1.11	0.32										
8868	0.65	232	0.30	0.36										
8869	1.59	335	0.74	0.36										
8871	0.12	173	0.05	0.36										
8901	0.36	200	0.15	0.29										
9012	2.54	439	1.09	0.29										
9014	5.21	733	2.35	0.32										
9015	5.54	769	2.50	0.32										
9016	4.46	651	2.00	0.32										
9019	3.20	512	1.28	0.26										
9033	3.29	522	1.48	0.32										
9040	4.69	676	2.18	0.35										
9044	1.89	368	0.88	0.36										
9052	3.04	494	1.41	0.36										
9058	2.22	404	1.09	0.44										
9060	2.18	400	1.01	0.36										
9061	2.02	382	0.99	0.44										

* Refer to the Footnotes Page for additional information on this class code.

Effective January 1, 2019
APPLICABLE TO ASSIGNED RISK POLICIES ONLY

FOOTNOTES

a Rate for each individual risk must be obtained from NCCI Customer Service or the Rating Organization having jurisdiction.

A Minimum Premium $100 per ginning location for policy minimum premium computation.

D Rate for classification already includes the specific disease loading shown in the table below. See ***Basic Manual*** Rule 3-A-7.

Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol	Code No.	Disease Loading	Symbol
0059D	0.61	S	1624D	0.07	S	4024D	0.08	S
0065D	0.14	S	1710D	0.07	S	5508D	0.09	S
0066D	0.14	S	1803D	0.56	S	6251D	0.09	S
0067D	0.14	S	3081D	0.21	S	6252D	0.05	S
1164D	0.10	S	3082D	0.08	S			
1165D	0.07	S	3085D	0.14	S			

S=Silica

F Rate provides for coverage under the United States Longshore and Harbor Workers Compensation Act and its extensions. Rate includes a provision for USL&HW Assessment.

M Risks are subject to Admiralty Law or Federal Employers Liability Act (FELA). However, the published rate is for risks that voluntarily purchase standard workers compensation and employers liability coverage. A provision for the USL&HW Assessment is included for those classifications under Program II USL Act. For the residual market, coverage under the Federal Employers' Liability Act (FELA) for employees of interstate railroads is not available for codes 6702, 6703, 6704, 7151, 7152, 7153, 8734, 8737, 8738, 8805, 8814, and 8815.

N This code is part of a ratable / non-ratable group shown below. The statistical non-ratable code and corresponding rate are applied in addition to the basic classification when determining premium.

Class Code	Non-Ratable Element Code
4771	0771
7405	7445
7431	7453

P Classification is computed on a per capita basis.

X Refer to special classification phraseology in these pages which is applicable in this state.

*** Class Codes with Specific Footnotes**

6702 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection code rate and elr each x 1.215.

6703 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate x 2.464 and elr x 2.298.

6704 Rate and rating values only appropriate for laying or relaying of tracks or maintenance of way - no work on elevated railroads. Otherwise, assign appropriate construction or erection class rate and elr each x 1.35.

Effective January 1, 2019
APPLICABLE TO ASSIGNED RISK POLICIES ONLY

MISCELLANEOUS VALUES

Basis of premium applicable in accordance with ***Basic Manual*** footnote instructions for Code 7370 -- "Taxicab Co.":

Employee operated vehicle	$68,800
Leased or rented vehicle	$45,900

Catastrophe (other than Certified Acts of Terrorism) - (Assigned Risk) 0.01

Expense Constant applicable in accordance with ***Basic Manual*** Rule 3-A-11 $160

Maximum Weekly Payroll applicable in accordance with ***Basic Manual*** Rule 2-E -- "Executive Officers" including members of limited liability companies, Rule 2-E-3 for Partners and Sole Proprietors, and ***Basic Manual*** footnote instructions for Code 9178 -- "Athletic Sports or Park: Non-Contact Sports", and Code 9179 -- "Athletic Sports or Park: Contact Sports" $3,500

Minimum Weekly Payroll applicable in accordance with ***Basic Manual*** Rule 2-E -- "Executive Officers" and members of limited liability companies and Rule 2-E-3 for Partners and Sole Proprietors $450

Terrorism - (Assigned Risk) 0.01

United States Longshore and Harbor Workers' Compensation Coverage Percentage applicable only in connection with ***Basic Manual*** Rule 3-A-4 107%

(Multiply a Non-F classification rate by a factor of 2.07 to adjust for differences in benefits and loss-based expenses. This factor is the product of the adjustment for differences in benefits (1.95) and the adjustment for differences in loss-based expenses (1.061).)

Experience Rating Eligibility

A risk qualifies for experience rating on an intrastate basis when it meets the premium eligibility requirements for the state in which it operates. The eligibility amount varies by rating effective date. The ***Experience Rating Plan Manual*** should be referenced for the latest approved eligibility amounts by state and by effective date.

Iowa

Workers Compensation Rate Filing – January 1, 2019

Proposed Values for Inclusion in the Experience Rating Plan Manual

The following pages include proposed values for the Experience Rating Plan Manual:

- Table of Weighting Values
- Table of Ballast Values
- Experience rating premium eligibility amounts

Effective January 1, 2019

TABLE OF WEIGHTING VALUES
APPLICABLE TO ALL POLICIES
Experience Rating Program - ERA

Expected Losses			Weighting Values	Expected Losses			Weighting Values
0	--	2,502	0.04	1,411,164	--	1,489,002	0.44
2,503	--	10,116	0.05	1,489,003	--	1,571,348	0.45
10,117	--	17,893	0.06	1,571,349	--	1,658,605	0.46
17,894	--	25,837	0.07	1,658,606	--	1,751,226	0.47
25,838	--	33,956	0.08	1,751,227	--	1,849,722	0.48
33,957	--	56,794	0.09	1,849,723	--	1,954,672	0.49
56,795	--	84,541	0.10	1,954,673	--	2,066,732	0.50
84,542	--	109,221	0.11	2,066,733	--	2,186,651	0.51
109,222	--	133,251	0.12	2,186,652	--	2,315,287	0.52
133,252	--	157,285	0.13	2,315,288	--	2,453,627	0.53
157,286	--	181,614	0.14	2,453,628	--	2,602,813	0.54
181,615	--	206,405	0.15	2,602,814	--	2,764,173	0.55
206,406	--	231,768	0.16	2,764,174	--	2,939,261	0.56
231,769	--	257,787	0.17	2,939,262	--	3,129,909	0.57
257,788	--	284,534	0.18	3,129,910	--	3,338,288	0.58
284,535	--	312,072	0.19	3,338,289	--	3,566,992	0.59
312,073	--	340,459	0.20	3,566,993	--	3,819,148	0.60
340,460	--	369,755	0.21	3,819,149	--	4,098,561	0.61
369,756	--	400,017	0.22	4,098,562	--	4,409,903	0.62
400,018	--	431,307	0.23	4,409,904	--	4,758,979	0.63
431,308	--	463,687	0.24	4,758,980	--	5,153,094	0.64
463,688	--	497,223	0.25	5,153,095	--	5,601,564	0.65
497,224	--	531,984	0.26	5,601,565	--	6,116,471	0.66
531,985	--	568,045	0.27	6,116,472	--	6,713,758	0.67
568,046	--	605,483	0.28	6,713,759	--	7,414,916	0.68
605,484	--	644,385	0.29	7,414,917	--	8,249,624	0.69
644,386	--	684,841	0.30	8,249,625	--	9,260,055	0.70
684,842	--	726,949	0.31	9,260,056	--	10,508,229	0.71
726,950	--	770,815	0.32	10,508,230	--	12,089,243	0.72
770,816	--	816,555	0.33	12,089,244	--	14,156,718	0.73
816,556	--	864,294	0.34	14,156,719	--	16,975,993	0.74
864,295	--	914,166	0.35	16,975,994	--	21,048,272	0.75
914,167	--	966,321	0.36	21,048,273	--	27,447,557	0.76
966,322	--	1,020,921	0.37	27,447,558	--	38,966,256	0.77
1,020,922	--	1,078,144	0.38	38,966,257	--	65,843,198	0.78
1,078,145	--	1,138,184	0.39	65,843,199	--	200,227,844	0.79
1,138,185	--	1,201,255	0.40	200,227,845		AND OVER	0.80
1,201,256	--	1,267,596	0.41				
1,267,597	--	1,337,468	0.42				
1,337,469	--	1,411,163	0.43				

(a) G	11.95
(b) State Per Claim Accident Limitation	$298,500
(c) State Multiple Claim Accident Limitation	$597,000
(d) USL&HW Per Claim Accident Limitation	$845,500
(e) USL&HW Multiple Claim Accident Limitation	$1,691,000
(f) Employers Liability Accident Limitation	$55,000
(g) Primary/Excess Loss Split Point	$17,000
(h) USL&HW Act -- Expected Loss Factor -- Non-F Classes	1.91

(Multiply a Non-F classification ELR by the USL&HW Act - Expected Loss Factor of 1.91.)

Effective January 1, 2019

TABLE OF BALLAST VALUES
APPLICABLE TO ALL POLICIES

Experience Rating Plan - ERA

Expected Losses			Ballast Values	Expected Losses			Ballast Values	Expected Losses			Ballast Values
0	--	64,277	29,875	2,062,582	--	2,122,297	239,000	4,153,226	--	4,212,967	448,125
64,278	--	110,626	35,850	2,122,298	--	2,182,015	244,975	4,212,968	--	4,272,708	454,100
110,627	--	163,883	41,825	2,182,016	--	2,241,735	250,950	4,272,709	--	4,332,450	460,075
163,884	--	220,065	47,800	2,241,736	--	2,301,456	256,925	4,332,451	--	4,392,192	466,050
220,066	--	277,613	53,775	2,301,457	--	2,361,179	262,900	4,392,193	--	4,451,935	472,025
277,614	--	335,884	59,750	2,361,180	--	2,420,903	268,875	4,451,936	--	4,511,677	478,000
335,885	--	394,576	65,725	2,420,904	--	2,480,629	274,850	4,511,678	--	4,571,420	483,975
394,577	--	453,535	71,700	2,480,630	--	2,540,355	280,825	4,571,421	--	4,631,163	489,950
453,536	--	512,671	77,675	2,540,356	--	2,600,083	286,800	4,631,164	--	4,690,906	495,925
512,672	--	571,931	83,650	2,600,084	--	2,659,811	292,775	4,690,907	--	4,750,650	501,900
571,932	--	631,281	89,625	2,659,812	--	2,719,541	298,750	4,750,651	--	4,810,393	507,875
631,282	--	690,699	95,600	2,719,542	--	2,779,271	304,725	4,810,394	--	4,870,137	513,850
690,700	--	750,169	101,575	2,779,272	--	2,839,002	310,700	4,870,138	--	4,929,881	519,825
750,170	--	809,679	107,550	2,839,003	--	2,898,734	316,675	4,929,882	--	4,989,625	525,800
809,680	--	869,222	113,525	2,898,735	--	2,958,467	322,650	4,989,626	--	5,049,369	531,775
869,223	--	928,791	119,500	2,958,468	--	3,018,200	328,625	5,049,370	--	5,109,113	537,750
928,792	--	988,382	125,475	3,018,201	--	3,077,934	334,600	5,109,114	--	5,168,857	543,725
988,383	--	1,047,990	131,450	3,077,935	--	3,137,669	340,575	5,168,858	--	5,228,602	549,700
1,047,991	--	1,107,614	137,425	3,137,670	--	3,197,404	346,550	5,228,603	--	5,288,346	555,675
1,107,615	--	1,167,250	143,400	3,197,405	--	3,257,140	352,525	5,288,347	--	5,348,091	561,650
1,167,251	--	1,226,898	149,375	3,257,141	--	3,316,876	358,500	5,348,092	--	5,407,836	567,625
1,226,899	--	1,286,554	155,350	3,316,877	--	3,376,613	364,475	5,407,837	--	5,467,581	573,600
1,286,555	--	1,346,219	161,325	3,376,614	--	3,436,350	370,450	5,467,582	--	5,527,326	579,575
1,346,220	--	1,405,892	167,300	3,436,351	--	3,496,088	376,425	5,527,327	--	5,587,071	585,550
1,405,893	--	1,465,570	173,275	3,496,089	--	3,555,826	382,400	5,587,072	--	5,646,816	591,525
1,465,571	--	1,525,254	179,250	3,555,827	--	3,615,564	388,375	5,646,817	--	5,706,125	597,500
1,525,255	--	1,584,943	185,225	3,615,565	--	3,675,303	394,350				
1,584,944	--	1,644,636	191,200	3,675,304	--	3,735,042	400,325				
1,644,637	--	1,704,334	197,175	3,735,043	--	3,794,782	406,300				
1,704,335	--	1,764,034	203,150	3,794,783	--	3,854,521	412,275				
1,764,035	--	1,823,739	209,125	3,854,522	--	3,914,262	418,250				
1,823,740	--	1,883,445	215,100	3,914,263	--	3,974,002	424,225				
1,883,446	--	1,943,155	221,075	3,974,003	--	4,033,743	430,200				
1,943,156	--	2,002,867	227,050	4,033,744	--	4,093,484	436,175				
2,002,868	--	2,062,581	233,025	4,093,485	--	4,153,225	442,150				

For Expected Losses greater than $5,706,125, the Ballast Value can be calculated using the following formula (rounded to the nearest 1):

Ballast = (0.10)(Expected Losses) + 2500(Expected Losses)(11.95) / (Expected Losses + (700)(11.95))

G = 11.95

NATIONAL COUNCIL ON COMPENSATION INSURANCE, INC.

IOWA—UPDATE TO EXPERIENCE RATING PREMIUM ELIGIBILITY AMOUNTS

EXPERIENCE RATING PLAN MANUAL—2003 EDITION
RULE 2—EXPERIENCE RATING ELEMENTS AND FORMULA
A. PREMIUM ELIGIBILITY

2. State Subject Premium Eligibility Amounts

A risk qualifies for experience rating when its subject premium, developed in its experience period, meets or exceeds the minimum eligibility amount shown in the State Table of Subject Premium Eligibility Amounts in Rule 2-A-2-c. *Refer to Rule 2-E-1 to determine a risk's experience period.*

a. A risk qualifies for experience rating if its data within the most recent 24 months of the experience period develops a subject premium of at least the amount shown in Column A.

b. A risk may not qualify according to Rule 2-A-2-a. If it has more than the amount of experience referenced in Rule 2-A-2-a, then to qualify for experience rating the risk must develop an average annual subject premium of at least the amount shown in Column B. *Refer to Rule 2-A-3 to determine average annual subject premium.*

c. A risk's rating effective date determines the applicable Column A and Column B subject premium eligibility amounts required to qualify for experience rating. *Refer to Rule 2-B for rating effective date determination.*

State Table of Subject Premium Eligibility Amounts

State	Rating Effective Date	Column A ($)	Column B ($)
IA	7/1/19 and after	8,000	4,000
	7/1/18 - 6/30/19	8,000	4,000
	7/1/17 - 6/30/18	8,000	4,000

NOTE: This exhibit revises the Iowa experience rating subject premium eligibility amounts shown in the State Table of Subject Premium Eligibility Amounts in NCCI's ***Experience Rating Plan Manual*** national Rule 2-A-2. The content shown in this table is not a complete replacement of the existing State Table of Subject Premium Eligibility Amounts. The premium eligibility amounts are applicable to all policies.

Iowa

Workers Compensation Rate Filing – January 1, 2019

Proposed Values for Inclusion in the Retrospective Rating Plan Manual

The following pages include values for inclusion in the Retrospective Rating Plan Manual:

- Average cost per case
- Average cost per case including ALAE
- Tax multipliers
- Countrywide expected loss ratio
- Countrywide expected loss and allocated expense ratio
- Table of expense ratios
- Excess loss factors
- Excess loss and allocated expense factors
- Retrospective development factors

1. Average Cost per Case

A	B	C	D	E	F	G
8,685	13,370	14,766	21,181	28,785	46,087	42,892

Average Cost per Case including ALAE

A	B	C	D	E	F	G
9,456	14,542	16,049	23,001	31,226	49,957	46,401

2. Tax Multipliers

a. State (non-F Classes)	1.022
b. Federal Classes, or non-F classes where rate is increased by the USL&HW Act Percentage	1.062

3. Countrywide Expected Loss Ratio
0.600

Countrywide Expected Loss and Allocated Expense Ratio
0.679

4. Table of Expense Ratios
Type A: 2018-02
Type B: 2018-02

5. Excess Loss Factors
(Applicable to New and Renewal Policies)

Per Accident Limitation	Hazard Groups A	B	C	D	E	F	G
$10,000	0.473	0.511	0.520	0.546	0.563	0.582	0.587
$15,000	0.439	0.480	0.491	0.520	0.540	0.561	0.569
$20,000	0.411	0.454	0.467	0.497	0.519	0.543	0.553
$25,000	0.388	0.433	0.446	0.478	0.502	0.527	0.539
$30,000	0.368	0.413	0.427	0.460	0.485	0.512	0.526
$35,000	0.350	0.396	0.411	0.444	0.471	0.499	0.514
$40,000	0.335	0.381	0.396	0.430	0.457	0.486	0.503
$50,000	0.308	0.354	0.370	0.404	0.433	0.463	0.482
$75,000	0.259	0.303	0.320	0.355	0.386	0.418	0.441
$100,000	0.225	0.267	0.284	0.318	0.350	0.382	0.409
$125,000	0.199	0.240	0.257	0.290	0.321	0.354	0.382
$150,000	0.180	0.218	0.235	0.267	0.298	0.331	0.360
$175,000	0.164	0.201	0.217	0.248	0.279	0.311	0.341
$200,000	0.151	0.186	0.202	0.232	0.263	0.294	0.325
$225,000	0.140	0.174	0.189	0.218	0.248	0.279	0.310
$250,000	0.130	0.163	0.178	0.206	0.236	0.265	0.297
$275,000	0.122	0.154	0.169	0.195	0.225	0.254	0.286
$300,000	0.115	0.145	0.160	0.186	0.215	0.243	0.275
$325,000	0.109	0.138	0.153	0.178	0.206	0.234	0.266
$350,000	0.103	0.131	0.146	0.170	0.198	0.225	0.257
$375,000	0.098	0.125	0.140	0.163	0.191	0.217	0.249
$400,000	0.093	0.120	0.134	0.157	0.184	0.210	0.242
$425,000	0.089	0.115	0.129	0.151	0.178	0.203	0.235
$450,000	0.085	0.111	0.124	0.146	0.172	0.197	0.228
$475,000	0.082	0.106	0.120	0.141	0.166	0.191	0.222
$500,000	0.079	0.103	0.116	0.136	0.162	0.185	0.217
$600,000	0.068	0.090	0.102	0.121	0.145	0.166	0.197
$700,000	0.059	0.080	0.091	0.108	0.131	0.152	0.182
$800,000	0.053	0.072	0.082	0.099	0.120	0.139	0.168
$900,000	0.048	0.065	0.075	0.090	0.111	0.129	0.157
$1,000,000	0.043	0.060	0.069	0.083	0.103	0.120	0.148
$2,000,000	0.021	0.031	0.038	0.047	0.061	0.072	0.094
$3,000,000	0.013	0.021	0.026	0.032	0.042	0.051	0.069
$4,000,000	0.009	0.015	0.019	0.024	0.032	0.039	0.054
$5,000,000	0.007	0.011	0.015	0.018	0.026	0.031	0.045
$6,000,000	0.005	0.009	0.012	0.015	0.021	0.026	0.038
$7,000,000	0.004	0.007	0.010	0.012	0.018	0.022	0.032
$8,000,000	0.004	0.006	0.008	0.010	0.015	0.019	0.028
$9,000,000	0.003	0.005	0.007	0.009	0.013	0.016	0.024
$10,000,000	0.003	0.004	0.006	0.008	0.011	0.014	0.022

Excess Loss and
Allocated Expense Factors
(Applicable to New and Renewal Policies)

Per Accident Limitation	Hazard Groups A	B	C	D	E	F	G
$10,000	0.521	0.560	0.570	0.597	0.614	0.634	0.638
$15,000	0.485	0.528	0.540	0.569	0.590	0.612	0.620
$20,000	0.456	0.501	0.514	0.546	0.569	0.594	0.604
$25,000	0.431	0.478	0.492	0.526	0.551	0.577	0.589
$30,000	0.410	0.458	0.473	0.507	0.534	0.562	0.576
$35,000	0.392	0.440	0.455	0.491	0.519	0.548	0.563
$40,000	0.375	0.424	0.439	0.476	0.504	0.535	0.551
$50,000	0.347	0.396	0.412	0.449	0.479	0.511	0.530
$75,000	0.294	0.342	0.359	0.396	0.429	0.463	0.487
$100,000	0.258	0.303	0.321	0.357	0.391	0.426	0.452
$125,000	0.230	0.274	0.292	0.327	0.361	0.395	0.424
$150,000	0.209	0.251	0.268	0.302	0.336	0.370	0.401
$175,000	0.192	0.232	0.249	0.282	0.315	0.349	0.381
$200,000	0.177	0.216	0.233	0.265	0.298	0.331	0.363
$225,000	0.165	0.202	0.219	0.250	0.282	0.315	0.347
$250,000	0.155	0.191	0.207	0.237	0.269	0.301	0.334
$275,000	0.146	0.180	0.196	0.225	0.257	0.288	0.321
$300,000	0.138	0.171	0.187	0.215	0.246	0.277	0.310
$325,000	0.131	0.163	0.179	0.206	0.236	0.266	0.300
$350,000	0.124	0.156	0.171	0.198	0.227	0.257	0.290
$375,000	0.119	0.149	0.164	0.190	0.219	0.248	0.281
$400,000	0.113	0.143	0.158	0.183	0.212	0.240	0.273
$425,000	0.109	0.137	0.152	0.177	0.205	0.233	0.266
$450,000	0.104	0.132	0.147	0.171	0.199	0.226	0.259
$475,000	0.100	0.128	0.142	0.165	0.193	0.219	0.252
$500,000	0.096	0.123	0.137	0.160	0.187	0.213	0.246
$600,000	0.084	0.109	0.122	0.143	0.169	0.193	0.225
$700,000	0.074	0.097	0.109	0.129	0.153	0.176	0.207
$800,000	0.066	0.088	0.099	0.118	0.141	0.162	0.193
$900,000	0.060	0.080	0.091	0.108	0.131	0.151	0.181
$1,000,000	0.055	0.073	0.084	0.100	0.122	0.141	0.170
$2,000,000	0.028	0.040	0.047	0.057	0.073	0.085	0.109
$3,000,000	0.018	0.026	0.032	0.039	0.051	0.061	0.080
$4,000,000	0.013	0.019	0.024	0.029	0.039	0.047	0.064
$5,000,000	0.010	0.015	0.018	0.023	0.031	0.038	0.052
$6,000,000	0.008	0.012	0.015	0.019	0.026	0.031	0.044
$7,000,000	0.006	0.010	0.012	0.016	0.022	0.027	0.038
$8,000,000	0.005	0.008	0.010	0.013	0.018	0.023	0.033
$9,000,000	0.004	0.007	0.009	0.011	0.016	0.020	0.029
$10,000,000	0.004	0.006	0.007	0.010	0.014	0.017	0.026

6. **Retrospective Development Factors**

With Loss Limit			Without Loss Limit			
1st Adj.	2nd Adj.	3rd Adj.	1st Adj.	2nd Adj.	3rd Adj.	4th & Subsequent Adjustment
0.04	0.03	0.02	0.16	0.11	0.08	0.00

Table of Expense Ratios - Excluding Taxes and Including Profit and Contingencies

Type A: 2018-02

WC Premium Range From		To	Expense Ratio
0	-	10,055	0.362
10,056	-	10,167	0.361
10,168	-	10,282	0.360
10,283	-	10,399	0.359
10,400	-	10,520	0.358
10,521	-	10,643	0.358
10,644	-	10,769	0.357
10,770	-	10,898	0.356
10,899	-	11,030	0.355
11,031	-	11,165	0.354
11,166	-	11,304	0.353
11,305	-	11,446	0.352
11,447	-	11,592	0.351
11,593	-	11,741	0.350
11,742	-	11,895	0.349
11,896	-	12,052	0.348
12,053	-	12,214	0.347
12,215	-	12,380	0.346
12,381	-	12,551	0.345
12,552	-	12,727	0.344
12,728	-	12,907	0.343
12,908	-	13,093	0.342
13,094	-	13,284	0.341
13,285	-	13,481	0.340
13,482	-	13,684	0.339
13,685	-	13,893	0.338
13,894	-	14,108	0.337
14,109	-	14,330	0.336
14,331	-	14,559	0.335
14,560	-	14,796	0.334
14,797	-	15,041	0.333
15,042	-	15,294	0.332
15,295	-	15,555	0.332
15,556	-	15,826	0.331
15,827	-	16,106	0.330
16,107	-	16,396	0.329
16,397	-	16,697	0.328
16,698	-	17,009	0.327
17,010	-	17,333	0.326
17,334	-	17,669	0.325
17,670	-	18,019	0.324
18,020	-	18,383	0.323
18,384	-	18,762	0.322
18,763	-	19,157	0.321
19,158	-	19,569	0.320
19,570	-	19,999	0.319
20,000	-	20,449	0.318
20,450	-	20,919	0.317
20,920	-	21,411	0.316
21,412	-	21,927	0.315

WC Premium Range From		To	Expense Ratio
21,928	-	22,469	0.314
22,470	-	23,037	0.313
23,038	-	23,636	0.312
23,637	-	24,266	0.311
24,267	-	24,931	0.310
24,932	-	25,633	0.309
25,634	-	26,376	0.308
26,377	-	27,164	0.307
27,165	-	27,999	0.307
28,000	-	28,888	0.306
28,889	-	29,836	0.305
29,837	-	30,847	0.304
30,848	-	31,929	0.303
31,930	-	33,090	0.302
33,091	-	34,339	0.301
34,340	-	35,686	0.300
35,687	-	37,142	0.299
37,143	-	38,723	0.298
38,724	-	40,444	0.297
40,445	-	42,325	0.296
42,326	-	44,390	0.295
44,391	-	46,666	0.294
46,667	-	49,189	0.293
49,190	-	51,999	0.292
52,000	-	55,151	0.291
55,152	-	58,709	0.290
58,710	-	62,758	0.289
62,759	-	67,407	0.288
67,408	-	72,799	0.287
72,800	-	79,130	0.286
79,131	-	86,666	0.285
86,667	-	95,789	0.284
95,790	-	107,058	0.283
107,059	-	121,333	0.282
121,334	-	139,999	0.281
140,000	-	165,454	0.281
165,455	-	200,377	0.280
200,378	-	208,235	0.279
208,236	-	216,734	0.278
216,735	-	225,957	0.277
225,958	-	235,999	0.276
236,000	-	246,976	0.275
246,977	-	259,024	0.274
259,025	-	272,307	0.273
272,308	-	287,027	0.272
287,028	-	303,428	0.271
303,429	-	321,818	0.270
321,819	-	342,580	0.269
342,581	-	366,206	0.268
366,207	-	393,333	0.267

WC Premium Range From		To	Expense Ratio
393,334	-	424,799	0.266
424,800	-	461,739	0.265
461,740	-	505,714	0.264
505,715	-	558,947	0.263
558,948	-	624,705	0.262
624,706	-	707,999	0.261
708,000	-	816,923	0.260
816,924	-	965,454	0.259
965,455	-	1,179,999	0.258
1,180,000	-	1,517,142	0.257
1,517,143	-	1,824,799	0.256
1,824,800	-	1,983,478	0.255
1,983,479	-	2,172,380	0.255
2,172,381	-	2,401,052	0.254
2,401,053	-	2,683,529	0.253
2,683,530	-	3,041,333	0.252
3,041,334	-	3,509,230	0.251
3,509,231	-	4,147,272	0.250
4,147,273	-	5,068,888	0.249
5,068,889	-	6,517,142	0.248
6,517,143	-	9,123,999	0.247
9,124,000	-	15,206,666	0.246
15,206,667	-	45,619,999	0.245
45,620,000	-	And Above	0.244

First	-	10,000	0.0%
Next	-	190,000	9.1%
Next	-	1,550,000	11.3%
Over	-	1,750,000	12.3%

Expected Loss Ratio:	0.600
Tax Multiplier:	1.039

Table of Expense Ratios - Excluding Taxes and Including Profit and Contingencies

Type B: 2018-02

WC Premium Range From		To	Expense Ratio
0	-	10,099	0.362
10,100	-	10,303	0.361
10,304	-	10,515	0.360
10,516	-	10,736	0.359
10,737	-	10,967	0.358
10,968	-	11,208	0.358
11,209	-	11,460	0.357
11,461	-	11,724	0.356
11,725	-	11,999	0.355
12,000	-	12,289	0.354
12,290	-	12,592	0.353
12,593	-	12,911	0.352
12,912	-	13,246	0.351
13,247	-	13,599	0.350
13,600	-	13,972	0.349
13,973	-	14,366	0.348
14,367	-	14,782	0.347
14,783	-	15,223	0.346
15,224	-	15,692	0.345
15,693	-	16,190	0.344
16,191	-	16,721	0.343
16,722	-	17,288	0.342
17,289	-	17,894	0.341
17,895	-	18,545	0.340
18,546	-	19,245	0.339

WC Premium Range From		To	Expense Ratio
19,246	-	19,999	0.338
20,000	-	20,816	0.337
20,817	-	21,702	0.336
21,703	-	22,666	0.335
22,667	-	23,720	0.334
23,721	-	24,878	0.333
24,879	-	26,153	0.332
26,154	-	27,567	0.332
27,568	-	29,142	0.331
29,143	-	30,909	0.330
30,910	-	32,903	0.329
32,904	-	35,172	0.328
35,173	-	37,777	0.327
37,778	-	40,799	0.326
40,800	-	44,347	0.325
44,348	-	48,571	0.324
48,572	-	53,684	0.323
53,685	-	59,999	0.322
60,000	-	67,999	0.321
68,000	-	78,461	0.320
78,462	-	92,727	0.319
92,728	-	113,333	0.318
113,334	-	145,714	0.317
145,715	-	200,606	0.316
200,607	-	213,548	0.315

WC Premium Range From		To	Expense Ratio
213,549	-	228,275	0.314
228,276	-	245,185	0.313
245,186	-	264,799	0.312
264,800	-	287,826	0.311
287,827	-	315,238	0.310
315,239	-	348,421	0.309
348,422	-	389,411	0.308
389,412	-	441,333	0.307
441,334	-	509,230	0.307
509,231	-	601,818	0.306
601,819	-	735,555	0.305
735,556	-	945,714	0.304
945,715	-	1,323,999	0.303
1,324,000	-	1,809,565	0.302
1,809,566	-	1,981,904	0.301
1,981,905	-	2,190,526	0.300
2,190,527	-	2,448,235	0.299
2,448,236	-	2,774,666	0.298
2,774,667	-	3,201,538	0.297
3,201,539	-	3,783,636	0.296
3,783,637	-	4,624,444	0.295
4,624,445	-	5,945,714	0.294
5,945,715	-	8,323,999	0.293
8,324,000	-	13,873,333	0.292
13,873,334	-	41,619,999	0.291
41,620,000	-	And Above	0.290

First	-	10,000	0.0%
Next	-	190,000	5.1%
Next	-	1,550,000	6.5%
Over	-	1,750,000	7.5%

Expected Loss Ratio:	0.600
Tax Multiplier:	1.039

Table of Expense Ratios - Excluding Allocated Loss Adjustment Expense and Taxes and Including Profit and Contingencies

Type A: 2018-02

WC Premium Range From		To	Expense Ratio
0	-	10,055	0.283
10,056	-	10,167	0.282
10,168	-	10,282	0.281
10,283	-	10,399	0.280
10,400	-	10,520	0.279
10,521	-	10,643	0.278
10,644	-	10,769	0.277
10,770	-	10,898	0.276
10,899	-	11,030	0.275
11,031	-	11,165	0.274
11,166	-	11,304	0.273
11,305	-	11,446	0.273
11,447	-	11,592	0.272
11,593	-	11,741	0.271
11,742	-	11,895	0.270
11,896	-	12,052	0.269
12,053	-	12,214	0.268
12,215	-	12,380	0.267
12,381	-	12,551	0.266
12,552	-	12,727	0.265
12,728	-	12,907	0.264
12,908	-	13,093	0.263
13,094	-	13,284	0.262
13,285	-	13,481	0.261
13,482	-	13,684	0.260
13,685	-	13,893	0.259
13,894	-	14,108	0.258
14,109	-	14,330	0.257
14,331	-	14,559	0.256
14,560	-	14,796	0.255
14,797	-	15,041	0.254
15,042	-	15,294	0.253
15,295	-	15,555	0.252
15,556	-	15,826	0.251
15,827	-	16,106	0.250
16,107	-	16,396	0.249
16,397	-	16,697	0.248
16,698	-	17,009	0.248
17,010	-	17,333	0.247
17,334	-	17,669	0.246
17,670	-	18,019	0.245
18,020	-	18,383	0.244
18,384	-	18,762	0.243
18,763	-	19,157	0.242
19,158	-	19,569	0.241
19,570	-	19,999	0.240
20,000	-	20,449	0.239
20,450	-	20,919	0.238
20,920	-	21,411	0.237
21,412	-	21,927	0.236

WC Premium Range From		To	Expense Ratio
21,928	-	22,469	0.235
22,470	-	23,037	0.234
23,038	-	23,636	0.233
23,637	-	24,266	0.232
24,267	-	24,931	0.231
24,932	-	25,633	0.230
25,634	-	26,376	0.229
26,377	-	27,164	0.228
27,165	-	27,999	0.227
28,000	-	28,888	0.226
28,889	-	29,836	0.225
29,837	-	30,847	0.224
30,848	-	31,929	0.223
31,930	-	33,090	0.222
33,091	-	34,339	0.222
34,340	-	35,686	0.221
35,687	-	37,142	0.220
37,143	-	38,723	0.219
38,724	-	40,444	0.218
40,445	-	42,325	0.217
42,326	-	44,390	0.216
44,391	-	46,666	0.215
46,667	-	49,189	0.214
49,190	-	51,999	0.213
52,000	-	55,151	0.212
55,152	-	58,709	0.211
58,710	-	62,758	0.210
62,759	-	67,407	0.209
67,408	-	72,799	0.208
72,800	-	79,130	0.207
79,131	-	86,666	0.206
86,667	-	95,789	0.205
95,790	-	107,058	0.204
107,059	-	121,333	0.203
121,334	-	139,999	0.202
140,000	-	165,454	0.201
165,455	-	200,377	0.200
200,378	-	208,235	0.199
208,236	-	216,734	0.198
216,735	-	225,957	0.197
225,958	-	235,999	0.196
236,000	-	246,976	0.196
246,977	-	259,024	0.195
259,025	-	272,307	0.194
272,308	-	287,027	0.193
287,028	-	303,428	0.192
303,429	-	321,818	0.191
321,819	-	342,580	0.190
342,581	-	366,206	0.189
366,207	-	393,333	0.188

WC Premium Range From		To	Expense Ratio
393,334	-	424,799	0.187
424,800	-	461,739	0.186
461,740	-	505,714	0.185
505,715	-	558,947	0.184
558,948	-	624,705	0.183
624,706	-	707,999	0.182
708,000	-	816,923	0.181
816,924	-	965,454	0.180
965,455	-	1,179,999	0.179
1,180,000	-	1,517,142	0.178
1,517,143	-	1,824,799	0.177
1,824,800	-	1,983,478	0.176
1,983,479	-	2,172,380	0.175
2,172,381	-	2,401,052	0.174
2,401,053	-	2,683,529	0.173
2,683,530	-	3,041,333	0.172
3,041,334	-	3,509,230	0.171
3,509,231	-	4,147,272	0.171
4,147,273	-	5,068,888	0.170
5,068,889	-	6,517,142	0.169
6,517,143	-	9,123,999	0.168
9,124,000	-	15,206,666	0.167
15,206,667	-	45,619,999	0.166
45,620,000	-	And Above	0.165

First	-	10,000	0.0%
Next	-	190,000	9.1%
Next	-	1,550,000	11.3%
Over	-	1,750,000	12.3%

Expected Loss and ALAE Ratio:	0.679
Tax Multiplier:	1.039

Table of Expense Ratios - Excluding Allocated Loss Adjustment Expense and Taxes and Including Profit and Contingencies

Type B: 2018-02

WC Premium Range From		To	Expense Ratio
0	-	10,099	0.283
10,100	-	10,303	0.282
10,304	-	10,515	0.281
10,516	-	10,736	0.280
10,737	-	10,967	0.279
10,968	-	11,208	0.278
11,209	-	11,460	0.277
11,461	-	11,724	0.276
11,725	-	11,999	0.275
12,000	-	12,289	0.274
12,290	-	12,592	0.273
12,593	-	12,911	0.273
12,912	-	13,246	0.272
13,247	-	13,599	0.271
13,600	-	13,972	0.270
13,973	-	14,366	0.269
14,367	-	14,782	0.268
14,783	-	15,223	0.267
15,224	-	15,692	0.266
15,693	-	16,190	0.265
16,191	-	16,721	0.264
16,722	-	17,288	0.263
17,289	-	17,894	0.262
17,895	-	18,545	0.261
18,546	-	19,245	0.260

WC Premium Range From		To	Expense Ratio
19,246	-	19,999	0.259
20,000	-	20,816	0.258
20,817	-	21,702	0.257
21,703	-	22,666	0.256
22,667	-	23,720	0.255
23,721	-	24,878	0.254
24,879	-	26,153	0.253
26,154	-	27,567	0.252
27,568	-	29,142	0.251
29,143	-	30,909	0.250
30,910	-	32,903	0.249
32,904	-	35,172	0.248
35,173	-	37,777	0.248
37,778	-	40,799	0.247
40,800	-	44,347	0.246
44,348	-	48,571	0.245
48,572	-	53,684	0.244
53,685	-	59,999	0.243
60,000	-	67,999	0.242
68,000	-	78,461	0.241
78,462	-	92,727	0.240
92,728	-	113,333	0.239
113,334	-	145,714	0.238
145,715	-	200,606	0.237
200,607	-	213,548	0.236

WC Premium Range From		To	Expense Ratio
213,549	-	228,275	0.235
228,276	-	245,185	0.234
245,186	-	264,799	0.233
264,800	-	287,826	0.232
287,827	-	315,238	0.231
315,239	-	348,421	0.230
348,422	-	389,411	0.229
389,412	-	441,333	0.228
441,334	-	509,230	0.227
509,231	-	601,818	0.226
601,819	-	735,555	0.225
735,556	-	945,714	0.224
945,715	-	1,323,999	0.223
1,324,000	-	1,809,565	0.222
1,809,566	-	1,981,904	0.222
1,981,905	-	2,190,526	0.221
2,190,527	-	2,448,235	0.220
2,448,236	-	2,774,666	0.219
2,774,667	-	3,201,538	0.218
3,201,539	-	3,783,636	0.217
3,783,637	-	4,624,444	0.216
4,624,445	-	5,945,714	0.215
5,945,715	-	8,323,999	0.214
8,324,000	-	13,873,333	0.213
13,873,334	-	41,619,999	0.212
41,620,000	-	And Above	0.211

First	10,000	0.0%
Next	190,000	5.1%
Next	1,550,000	6.5%
Over	1,750,000	7.5%

Expected Loss and ALAE Ratio:	0.679
Tax Multiplier:	1.039

Part 3 Supporting Exhibits

- Exhibit I: Determination of the Indicated Advisory Rate Level Change
- Exhibit II: Workers Compensation Expense Program
- Appendix A: Factors Underlying the Proposed Rate Level Change
- Appendix B: Calculations Underlying the Advisory Rate Change by Classification
- Appendix C: Memoranda for Laws and Assessments
- Appendix D: Internal Rate of Return Analysis
- Appendix E: Calculation of Factor to Convert Voluntary Rates to Assigned Risk Rates

Iowa

Workers Compensation Rate Filing – January 1, 2019

Exhibit I – Determination of Indicated Advisory Rate Level Change

NCCI uses the following general methodology to determine the indicated change based on experience, trend, and benefits for each of the policy years in the experience period:

1. Standard earned premium at Designated Statistical Reporting (DSR) level is developed to ultimate and on-leveled to the current approved advisory rate level
2. Reported indemnity and medical losses are limited by a large loss threshold, developed to ultimate using limited development factors, and on-leveled to a common benefit level to yield adjusted limited losses
3. Limited indemnity and medical cost ratios excluding trend and benefits changes are calculated as adjusted losses (step 2) divided by premium available for benefit costs (step 1)
4. Trend factors are applied to the indemnity and medical cost ratios to reflect expected differences between the historical experience years and the effective period of the proposed filing
5. An excess provision is applied to adjust the limited cost ratios to an unlimited basis
6. A factor is applied to reflect the impact of proposed indemnity and medical benefit changes
7. The projected unlimited indemnity and medical cost ratios including benefit changes are added to yield the indicated change based on experience, trend, and benefits

The indicated change based on experience, trend, and benefits for this filing is calculated as the average of the indicated changes for each of the individual policy years in the experience period. Lastly, the impact of the change in loss-based expenses, change in production and general expenses, change in premium taxes and assessments, and change in the profit and contingency provision is applied to determine the indicated overall average advisory rate level change. The detailed calculations can be found on the following pages.

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EXHIBIT I

Determination of Indicated Rate Level Change

Section A - Policy Year 2016 Experience

Premium:

(1)	Standard Earned Premium Developed to Ultimate (Appendix A-II)	$801,760,274
(2)	Premium On-level Factor (Appendix A-I)	0.504
(3)	Pure Premium Available for Benefit Costs = (1) x (2)	$404,087,178

Indemnity Benefit Cost:

(4)	Limited Indemnity Losses Developed to Ultimate (Appendix A-II)	$163,335,053
(5)	Indemnity Loss On-level Factor (Appendix A-I)	0.937
(6)	Adjusted Limited Indemnity Losses = (4) x (5)	$153,044,945
(7)	Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (6) / (3)	0.379
(8)	Factor to Reflect Indemnity Trend (Appendix A-III)	0.956
(9)	Projected Limited Indemnity Cost Ratio = (7) x (8)	0.362
(10)	Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II)	1.013
(11)	Projected Indemnity Cost Ratio = (9) x (10)	0.367
(12)	Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C)	1.001
(13)	Projected Indemnity Cost Ratio including Benefit Changes = (11) x (12)	0.367

Medical Benefit Cost:

(14)	Limited Medical Losses Developed to Ultimate (Appendix A-II)	$200,370,106
(15)	Medical Loss On-level Factor (Appendix A-I)	1.000
(16)	Adjusted Limited Medical Losses = (14) x (15)	$200,370,106
(17)	Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (16) / (3)	0.496
(18)	Factor to Reflect Medical Trend (Appendix A-III)	0.970
(19)	Projected Limited Medical Cost Ratio = (17) x (18)	0.481
(20)	Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II)	1.013
(21)	Projected Medical Cost Ratio = (19) x (20)	0.487
(22)	Factor to Reflect Proposed Changes in Medical Benefits (Appendix C)	1.000
(23)	Projected Medical Cost Ratio including Benefit Changes = (21) x (22)	0.487

Total Benefit Cost:

(24)	Indicated Change Based on Experience, Trend and Benefits = (13) + (23)	0.854

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EXHIBIT I

Determination of Indicated Rate Level Change

Section B - Policy Year 2015 Experience

Premium:

(1)	Standard Earned Premium Developed to Ultimate (Appendix A-II)	$765,680,343
(2)	Premium On-level Factor (Appendix A-I)	0.516
(3)	Pure Premium Available for Benefit Costs = (1) x (2)	$395,091,057

Indemnity Benefit Cost:

(4)	Limited Indemnity Losses Developed to Ultimate (Appendix A-II)	$185,162,594
(5)	Indemnity Loss On-level Factor (Appendix A-I)	0.931
(6)	Adjusted Limited Indemnity Losses = (4) x (5)	$172,386,375
(7)	Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (6) / (3)	0.436
(8)	Factor to Reflect Indemnity Trend (Appendix A-III)	0.941
(9)	Projected Limited Indemnity Cost Ratio = (7) x (8)	0.410
(10)	Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II)	1.013
(11)	Projected Indemnity Cost Ratio = (9) x (10)	0.415
(12)	Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C)	1.001
(13)	Projected Indemnity Cost Ratio including Benefit Changes = (11) x (12)	0.415

Medical Benefit Cost:

(14)	Limited Medical Losses Developed to Ultimate (Appendix A-II)	$222,862,689
(15)	Medical Loss On-level Factor (Appendix A-I)	1.000
(16)	Adjusted Limited Medical Losses = (14) x (15)	$222,862,689
(17)	Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (16) / (3)	0.564
(18)	Factor to Reflect Medical Trend (Appendix A-III)	0.961
(19)	Projected Limited Medical Cost Ratio = (17) x (18)	0.542
(20)	Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II)	1.013
(21)	Projected Medical Cost Ratio = (19) x (20)	0.549
(22)	Factor to Reflect Proposed Changes in Medical Benefits (Appendix C)	1.000
(23)	Projected Medical Cost Ratio including Benefit Changes = (21) x (22)	0.549

Total Benefit Cost:

(24)	Indicated Change Based on Experience, Trend and Benefits = (13) + (23)	0.964

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EXHIBIT I

Determination of Indicated Rate Level Change

Section C - Indicated Change Based on Experience, Trend, and Benefits

(1)	Policy Year 2016 Indicated Change Based on Experience, Trend, and Benefits	0.854
(2)	Policy Year 2015 Indicated Change Based on Experience, Trend, and Benefits	0.964
(3)	Indicated Change Based on Experience, Trend, and Benefits = [(1)+(2)] / 2	0.909

Section D - Application of the Change in Production and General Expenses

(1)	Indicated Rate Level Change	0.909
(2)	Effect of the Change in Production and General Expenses (Exhibit II)	1.003
(3)	Indicated Change Modified to Reflect the Change in Production and General Expenses = (1) x (2)	0.912

Section E - Application of the Change in Taxes

(1)	Indicated Rate Level Change	0.912
(2)	Effect of the Change in Taxes (Exhibit II)	0.999
(3)	Indicated Change Modified to Reflect the Change in Taxes = (1) x (2)	0.911

Section F - Application of the Change in the Profit and Contingency Provision

(1)	Indicated Rate Level Change	0.911
(2)	Effect of the Change in the Profit and Contingency Provision (Exhibit II)	0.993
(3)	Indicated Change Modified to Reflect the Change in the Profit and Contingency Provision = (1) x (2)	0.905

Section G - Application of the Change in Loss-based Expenses

(1)	Indicated Rate Level Change	0.905
(2)	Effect of the Change in Loss-based Expenses (Exhibit II)	1.003
(3)	Indicated Change Modified to Reflect the Change in Loss-based Expenses = (1) x (2)	0.908

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EXHIBIT I

Determination of Indicated Rate Level Change

Section H - Distribution of Overall Rate Level Change to Industry Groups

Industry Group Differentials (Appendix A-IV):

Manufacturing	1.005
Contracting	1.002
Office & Clerical	1.029
Goods & Services	0.984
Miscellaneous	1.005

Applying these industry group differentials to the final overall rate level change produces the changes in rate level proposed for each group as shown:

Industry Group	(1) Final Overall Rate Level Change	(2) Industry Group Differential	(3) = (1) x (2) Final Rate Level Change by Industry Group	
Manufacturing	0.908	1.005	0.913	(-8.7%)
Contracting	0.908	1.002	0.910	(-9.0%)
Office & Clerical	0.908	1.029	0.934	(-6.6%)
Goods & Services	0.908	0.984	0.893	(-10.7%)
Miscellaneous	0.908	1.005	0.913	(-8.7%)
Overall	0.908	1.000	0.908	(-9.2%)

Exhibit II – Workers Compensation Expense Program

Loss Adjustment Expenses

The proposed advisory rates include a provision for loss adjustment expenses (LAE).

LAE is included in the advisory rates by using a ratio of loss adjustment expense dollars to loss dollars (called the LAE provision). These expenses are directly associated with the handling of workers compensation claims. The LAE provision is comprised of two components: Defense and Cost Containment Expenses (DCCE) and Adjusting and Other Expenses (AOE).

NCCI uses the following general methodology to determine the proposed LAE provision based on data for private carriers.

1. Using data obtained from the NCCI Call for Loss Adjustment Expense, accident year developed LAE ratios are calculated on a countrywide basis, including separate DCCE and AOE ratio components.
2. A state-to-countrywide DCCE relativity is selected based on NAIC Annual Statement data.
3. The state-specific DCCE ratio is calculated by multiplying the countrywide-selected DCCE ratio by the state-to-countrywide DCCE relativity.
4. Given the nature of AOE, it cannot be allocated to a specific claim, and hence cannot be accurately attributed to specific states. Therefore, the state-specific AOE ratio reflects the latest selected countrywide provision.

The calculation of the loss-based expense provision is shown in Exhibit II.

Production and General Expenses, and Taxes

Production costs include commissions, costs of preparing the policy, verifying the correct application of rates and rating plans, billing and collecting premium and the costs of maintaining company branch offices. General expenses are commonly classified into four categories: general administration, audit, boards and bureaus, and inspection.

The proposed expenses are reviewed each year. The annual review relies on actual experience in recent years based on the most recently available data from the Insurance Expense Exhibit, which is reported annually by insurers to state insurance departments.

See Exhibit II-A for more information.

Profit and Contingency Provision

NCCI is proposing to decrease the current approved profit and contingency provision from 0.0% to –0.5%. See Appendix D for more information.

IOWA

EXHIBIT II

Comparison of Proposed and Current Expense Provisions

Overhead expense provisions are itemized below. These figures are expressed as percentages of standard premium (excluding expense constant) and are indicative of the expenses of the first $10,000 of policy premium. Taken together these allowances represent that portion of the standard premium dollar necessary to operate the benefit system. The complementary portion corresponds to the portion of the premium dollar available to finance benefits, loss adjustment expenses and loss-based assessments, if applicable. It is referred to as the "target cost ratio."

		Expense Provisions Underlying Current Rates	Expense Provisions Underlying Proposed Rates
(1)	Expense Constant	$160	$160
(2)	Production Expense	18.3%	18.5%
(3)	General Expense	5.0%	5.0%
(4)	Taxes, Licenses and Fees (other than Federal Income Tax)		
	Premium Tax	1.0%	1.0%
	Miscellaneous	0.3%	0.3%
	Second Injury Fund	1.0%	0.9%
	Total	**2.3%**	**2.2%**
(5)	Profit and Contingency Provision	0.0%	-0.5%
(6)	Total Overhead Provisions (2)+(3)+(4)+(5)	25.6%	25.2%
(7)	Target Cost Ratio [100% - (6)]	74.4%	74.8%
(8)	Loss Adjustment Expense	15.4%	15.7%
(9)	Loss-based Assessment	0.0%	0.0%
(10)	Permissible Loss Ratio (7) / [1+(8)+(9)]	64.5%	64.6%

IOWA

EXHIBIT II

Calculation of Change in Expense Provisions

		A Current Expenses	B Col. A with Proposed Prod & Gen Exp	C Col. B with Proposed Taxes	D Col. C with Proposed Profit and Contingency
(1)	Production Expense	18.3%	18.5%	18.5%	18.5%
(2)	General Expense	5.0%	5.0%	5.0%	5.0%
(3)	Taxes	2.3%	2.3%	2.2%	2.2%
(4)	Profit and Contingency Provision	0.0%	0.0%	0.0%	-0.5%
(5)	Total Provisions (1)+(2)+(3)+(4)	25.6%	25.8%	25.7%	25.2%
(6)	TCR (100%-(5))	74.4%	74.2%	74.3%	74.8%
(7)	Loss Based Expenses	15.4%	15.7%	15.7%	15.7%
(8)	Change in Production and General Expense (6A) / (6B)			1.003	+0.3%
(9)	Change in Taxes and Assessments (6B) / (6C)			0.999	-0.1%
(10)	Change in Profit and Contingency Provision (6C) / (6D)			0.993	-0.7%
(11)	Change in Loss Based Expenses [1.0 + (7B)]/[1.0 + (7A)]			1.003	+0.3%

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EXHIBIT II

Countrywide Expense Program

NCCI annually reviews expense provisions underlying workers compensation rates. This review procedure is based on countrywide expense data. Since a significant portion of workers compensation insurance is interstate business, it is not practical to allocate expenses (especially general, other acquisition, and adjusting and other loss adjustment expenses) to particular states.

The NCCI expense program is designed to ensure equity among employers through a percentage provision in manual rates, a schedule of premium discounts for risks with standard premium in excess of $10,000, and the application of an expense constant.

The majority of expenses incurred in workers compensation vary directly by layer of premium and are accordingly termed variable expenses. An equitable apportionment of variable expense is achieved through the application of premium discounts. As the premium for a policy increases, some expenses incurred in handling the insurance coverage become proportionately less in terms of premium. A fair expense program must, therefore, provide that the larger premium policies be charged a lower percentage of premium for these expenses than the smaller policies.

Other expenses such as issuing, recording and auditing are common to all policies regardless of size. These common expenses are called fixed expenses and are addressed by incorporating an expense constant in the program.

IOWA

EXHIBIT II

Derivation of General Expense Provisions

The data below (amounts in thousands) illustrates that the combination of a 5.0% general expense provision in the manual rates, a $160 expense constant, and the premium discount schedule generates general expense premium dollars that are consistent with historical actual general expenses as reported in the Insurance Expense Exhibit. All figures below obtained from the Insurance Expense Exhibit (IEE) include data for participating stock, non-participating stock, and mutual companies.

		2015	2016	2017
(1)	Direct Earned Premium *(NAIC Insurance Expense Exhibit Data)*	47,962,596	49,589,244	49,874,309
	(1a) Effect of Premium Discounts	0.9284	0.9284	0.9284
	(1b) Effect of Schedule Rating	0.9605	0.9501	0.9489
	(1c) Effect of Carrier Deviations	1.0383	1.0249	1.0278
	(1d) Effect of Deductibles	0.7337	0.7364	0.7387
	(1e) Expense Constant Offset	0.9919	0.9918	0.9918
(2)	Gross Adjusted Premium *(STD Premium @ NCCI Level Excl. Expense Constant)* {(1) / [(1a) x (1b) x (1c) x (1d)]} x (1e)	70,032,027	73,877,445	73,955,198
(3)	Direct General Expenses Incurred *(NAIC Insurance Expense Exhibit Data)*	2,819,889	2,813,993	3,200,452
	(3a) Proportion of Expense Constant Attributable to General Expenses	0.4063	0.4063	0.4063
(4)	General Expenses Incurred *(Excluding Expense Constant Revenue)* (3) - (2) x [1-(1e)]/(1e) x (3a)	2,587,529	2,565,823	2,952,021
(5)	Ratio of General Expense to Premium *(Excluding Expense Constant Revenue)* (4)/(2)	3.69%	3.47%	3.99%
(6)	General Expense Gradations *(General Expenses in Average Premium Discount)*	1.27%	1.28%	1.28%
(7)	General Expense Provision (5)+(6)	4.96%	4.75%	5.27%
(8)	Selected General Expense Provision *(Three-Year Average)*			**5.0%**

IOWA

EXHIBIT II

Derivation of Production Expense Provisions

The data below (amounts in thousands) illustrates that the combination of a 18.5% production expense provision in the manual rates, a $160 expense constant, and the premium discount schedule generates production expense premium dollars that are consistent with historical actual production expenses as reported for combined stock and mutual companies' voluntary business. All figures below obtained from the Insurance Expense Exhibit (IEE) include data for participating stock, non-participating stock, and mutual companies.

		2015	2016	2017
(1)	Direct Written Premium *(NAIC Insurance Expense Exhibit Data)*	48,603,697	49,898,708	50,045,258
(1a)	Effect of Premium Discounts	0.9283	0.9284	0.9284
(1b)	Effect of Schedule Rating	0.9595	0.9501	0.9481
(1c)	Effect of Carrier Deviations	1.0388	1.0248	1.0297
(1d)	Effect of Deductibles	0.7334	0.7387	0.7387
(1e)	Expense Constant Offset	0.9919	0.9917	0.9917
(2)	Pool Written Premium *(Summary of NCCI Managed Pools - Combined Stock and Mutual Company Data)*	1,214,412	1,156,397	1,110,747
(3)	Adjusted Direct Written Premium *(STD Premium Excl. Pool Written Premium)* [(1)-(2)] / (1a) x (1e)	50,636,036	52,065,650	52,270,955
(4)	Gross Direct Written Premium *(STD Premium @ NCCI Level Incl. Pool Written Premium)* {(1) / [(1a) x (1b) x (1c) x (1d)]} x (1e)	71,044,591	74,106,781	74,126,783
(5)	Direct Commission & Brokerage Incurred *(NAIC Insurance Expense Exhibit Data)*	4,208,419	4,434,236	4,591,083
(6)	Pool Producer Fees *(Summary of NCCI Managed Pools - Combined Stock and Mutual Company Data)*	42,649	42,149	39,826
(7)	Direct Other Acquisition Expenses Incurred *(NAIC Insurance Expense Exhibit Data)*	2,669,227	2,899,995	2,498,189
(7a)	Proportion of Expense Constant Attributable to Production Expenses	0.5313	0.5313	0.5313
(8)	Other Acquisition Expenses Incurred *(Excluding Expense Constant Revenue)* (7) - (4) x [1-(1e)]/(1e) x (7a)	2,360,988	2,570,465	2,168,570
(9)	Ratio of Other Acq. Expenses to Premium *(Excluding Expense Constant Revenue)* (8)/(4)	3.32%	3.47%	2.93%
(10)	Direct Commission & Brokerage Provision [(5)-(6)]/(3)	8.23%	8.44%	8.71%
(11)	Production Expense Gradations *(Production Expenses in Average Premium Discount)*	6.79%	6.78%	6.78%
(12)	Production Expense Provision (9)+(10)+(11)	18.34%	18.69%	18.42%
(13)	Selected Production Expense Provision *(Three-Year Average)*			**18.5%**

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EXHIBIT II

Section A - Determination of Loss Adjustment Expense Provision

NCCI has computed the loss adjustment expense allowance on an accident year basis using data obtained from the NCCI Call for Loss Adjustment Expense. For this filing, NCCI proposes a 15.7% loss adjustment expense allowance as a percentage of incurred losses.

Accident Year	Accident Year Developed LAE Ratio	Accident Year Developed DCCE Ratio	Accident Year Developed AOE Ratio
2013	20.3%	13.1%	7.2%
2014	20.3%	13.4%	6.9%
2015	20.0%	13.1%	6.9%
2016	20.5%	13.2%	7.3%
2017	21.0%	13.2%	7.8%
Countrywide selected:	20.8%	13.2%	7.6%
Iowa Selected: (8.1% = 13.2% x 0.612)	**15.7%**	**8.1%**	**7.6%**

Section B - Determination of Iowa DCCE relativity--(Latest 3-years of calendar year data)

(1a) Iowa paid losses (in 000's)	1,196,820
(1b) Iowa paid DCCE (in 000's)	95,000
(1c) Ratio (1b)/(1a)	7.9%
(2a) Countrywide paid losses (in 000's)	69,515,494
(2b) Countrywide paid DCCE (in 000's)	8,987,869
(2c) Ratio (2b)/(2a)	12.9%
(3) Iowa DCCE relativity (1c)/(2c)	0.612

Notes

NAIC Annual Statement data is used in the above calculations. The countrywide figures exclude state funds.

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EXHIBIT II

Table of Premium Discounts

Division of Standard Premium		Type A Discounts	Type B Discounts
First	$10,000	---	---
Next	$190,000	9.1%	5.1%
Next	$1,550,000	11.3%	6.5%
Over	$1,750,000	12.3%	7.5%

Application of the appropriate discount schedule to the standard premium produces a dollar discount that is subtracted from the standard premium.

IOWA

EXHIBIT II

Average Expense Provisions

Reproduced below are the gradated expense provisions by policy size.

Gradation of Standard Premium

Division of Premium		Expense Gradations Production*	General	Discounts
First	$10,000	18.5%	5.0%	---
Next	$190,000	11.0%	4.0%	9.1%
Next	$1,550,000	9.5%	3.4%	11.3%
Over	$ 1,750,000	9.5%	2.5%	12.3%
Proposed Average:		11.7%	3.7%	
Proposed Average Expense Gradation: *(Expense for 1st $10,000 - Avg Expense)*		6.8%	1.3%	

Average Premium Discount:
[Avg Exp Grad] / [1-Taxes-P&C] = [6.8%+1.3%] / [1-2.2% - -0.5%] = 8.2%

Composition of Standard Premium:

Benefit & Loss Adj. Cost	Production (18.5%)	General (5.0%)	Profit (-0.5%)	Taxes (2.2%)		
74.8%	11.7%	3.7%	-0.5%	2.0%	-- Premium After Discounts (91.7%)	-- Standard Premium Excluding Expense Constant (100.0%)
	6.8%	1.3%	0.0%	0.2%	-- Discount (8.3%)	
	0.5%	0.4%	0.0%	0.0%	-- Premium from $160 expense constant. (.8% = 1/0.992 - 1)^	

Notes

** The production expense gradations shown are based on Type A gradations.*
^ The 0.992 offset is for the $160 expense constant.

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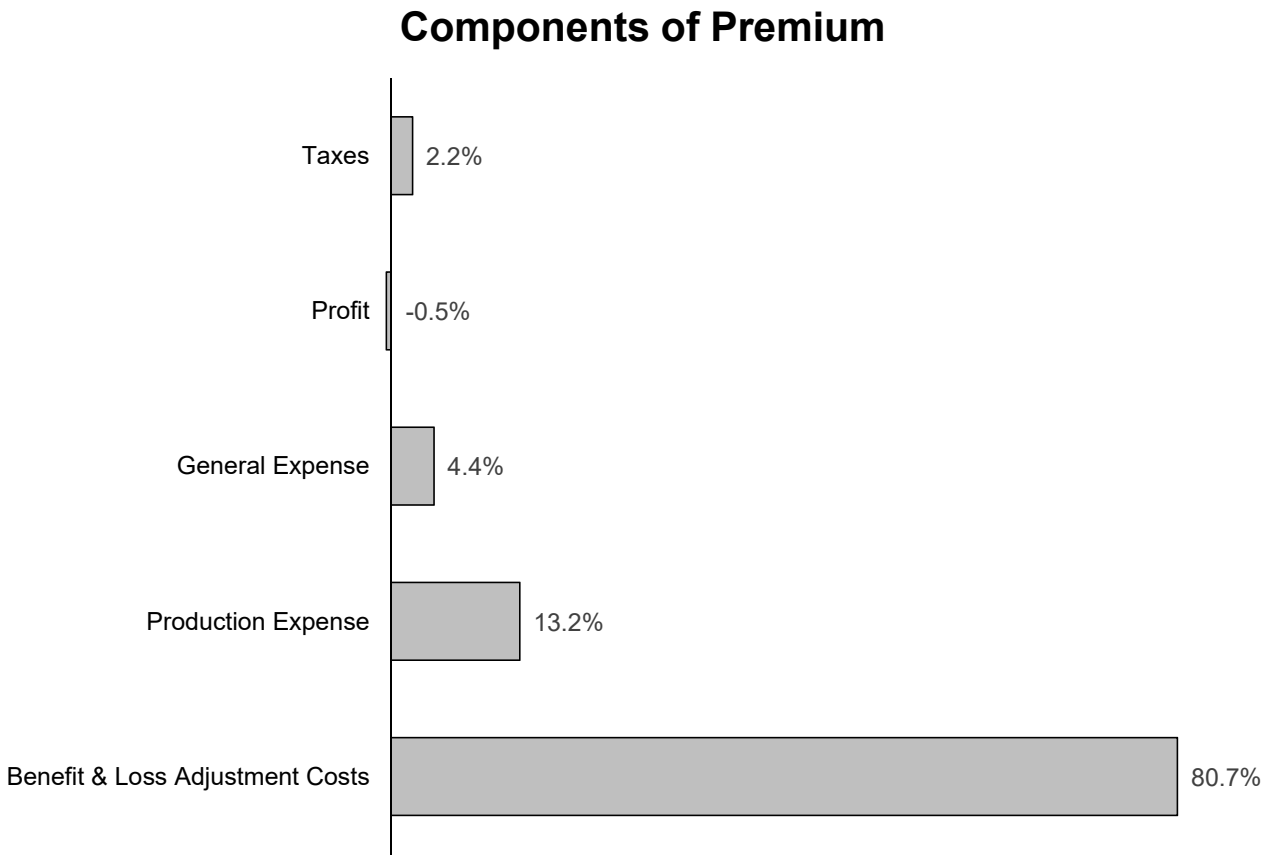
EXHIBIT II

Iowa Expense Provisions as a Percentage of Net Premium at NCCI Level

The exhibit below illustrates the allocation of the final premium dollar after the application of premium discounts and expense constants based on Iowa expense provisions.



Notes

Benefit & Loss Adjustment Costs	80.7%	=	(74.8%) / 92.6%
Production Expense	13.2%	=	(11.7% + 0.5%) / 92.6%
General Expense	4.4%	=	(3.7% + 0.4%) / 92.6%
Profit	-0.5%	=	(-0.5% + 0.0%) / 92.6%
Taxes	2.2%	=	(2.0% + 0.0%) / 92.6%
Total	**100.0%**		

Appendix A – Factors Underlying the Proposed Rate Level Change

Appendix A-I Determination of Policy Year On-level Factors

NCCI uses premium and loss on-level factors to adjust historical policy year experience to current rate and benefit levels, respectively.

Premium on-level factors are adjustment factors that reflect the cumulative impact of all premium level changes that have occurred during and after the individual year being on-leveled. To calculate a weighted average, NCCI utilizes a monthly premium distribution for Iowa based on an analysis of policies reported in the Unit Statistical Data. Additional adjustments applied as part of the premium on-level factor calculation include:

- Adjustment for Expense Constant Removal: This factor removes premium collected via the charged expense constant.
- Adjustment for Expense Removal: This factor is applied to remove expenses from the reported assigned risk and voluntary DSR level premium totals—serving to make the separate market premiums more comparable.
- Experience Rating Off-Balance Adjustment Factor: This factor reflects the relative difference between the average experience rating modification for the historical year being on-leveled and the average experience rating modification targeted in the filing.

Loss on-level factors are adjustment factors that reflect the cumulative impact of all benefit level changes that have occurred during and after the individual year of data being on-leveled.

Note: For NCCI ratemaking purposes, proposed benefit level changes that (i) do not impact the experience period of the filing and (ii) have not yet been approved are included in Exhibit I, rather than in the loss on-level calculation.

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APPENDIX A-I

Determination of Policy Year On-level Factors

Section A - Factor Adjusting 2016 Policy Year Assigned Risk Premium to Present Assigned Risk Level

	Date	(1) Rate Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)	(6) Adj. For Expense Constant Removal @	(7) Adj. For Expense Removal	(8) Premium Adjustment Factor (5)x(6)x(7)
NR	01/01/16	Base	1.000	1.000	1.000	0.820	0.989	0.627	0.508
NR	01/01/17	0.953	0.953						
NR	07/01/17	0.961	0.916						
NR	01/01/18	0.913	0.836						
NR	06/01/18	0.981	0.820						
					1.000				

Section B - Factor Adjusting 2016 Policy Year Voluntary Premium to Present Voluntary Level

	Date	(1) Rate Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)	(6) Adj. For Expense Constant Removal @	(7) Adj. For Expense Removal	(8) Premium Adjustment Factor (5)x(6)x(7)
NR	01/01/16	Base	1.000	1.000	1.000	0.820	0.989	0.627	0.508
NR	01/01/17	0.953	0.953						
NR	07/01/17	0.961	0.916						
NR	01/01/18	0.913	0.836						
NR	06/01/18	0.981	0.820						
					1.000				

Section C - Factor Adjusting 2016 Policy Year Assigned Risk Premium and Voluntary Premium to Present Statewide Level

(1)	Assigned Risk Market Share PY 2016	0.046
(2)	Voluntary Market Share PY 2016	0.954
(3)	Assigned Risk Standard Premium Adjustment Factor (See Sec. A)	0.508
(4)	Voluntary Standard Premium Adjustment Factor (See Sec. B)	0.508
(5)	Premium Adjustment Factor = [(1)x(3)]/1.417+(2)x(4) #	0.501
(6)	Experience Rating Off-balance Adjustment Factor*	1.006
(7)	Final Premium Adjustment Factor = (5)x(6)	0.504

NR New and renewal business.
@ Eliminates premium derived from expense constants.
# Current premium index (assigned risk-to-voluntary) = 1.417
* = 1.006 = 0.952 / 0.946 = (Targeted Off-balance) / (Off-balance for Policy Year 2016)

Determination of Policy Year On-level Factors

Section D - Factor Adjusting 2016 Policy Year Indemnity Losses to Present Benefit Level

Date	(1) Benefit Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)
07/01/15	Base	1.000	0.169	0.169	0.937
07/01/16	1.001	1.001	0.745	0.746	
07/01/17	0.913	0.914	0.086	0.079	
01/01/18	1.019	0.931			
				0.994	

Section E - Factor Adjusting 2016 Policy Year Medical Losses to Present Benefit Level

Date	(1) Benefit Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)
07/01/15	Base	1.000	0.169	0.169	1.000
07/01/16	1.000	1.000	0.745	0.745	
07/01/17	1.000	1.000	0.086	0.086	
01/01/18	1.000	1.000			
				1.000	

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APPENDIX A-I

Determination of Policy Year On-level Factors

Section F - Factor Adjusting 2015 Policy Year Assigned Risk Premium to Present Assigned Risk Level

	Date	(1) Rate Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)	(6) Adj. For Expense Constant Removal @	(7) Adj. For Expense Removal	(8) Premium Adjustment Factor (5)x(6)x(7)
NR	01/01/15	Base	1.000	1.000	1.000	0.844	0.980	0.627	0.519
NR	01/01/16	1.028	1.028						
NR	01/01/17	0.953	0.980						
NR	07/01/17	0.961	0.942						
NR	01/01/18	0.913	0.860						
NR	06/01/18	0.981	0.844						
					1.000				

Section G - Factor Adjusting 2015 Policy Year Voluntary Premium to Present Voluntary Level

	Date	(1) Rate Level Change	(2) Cumulative Index	(3) Weight	(4) Product (2)x(3)	(5) Adj. Factor Present Index/ Sum Column (4)	(6) Adj. For Expense Constant Removal @	(7) Adj. For Expense Removal	(8) Premium Adjustment Factor (5)x(6)x(7)
NR	01/01/15	Base	1.000	1.000	1.000	0.844	0.980	0.627	0.519
NR	01/01/16	1.028	1.028						
NR	01/01/17	0.953	0.980						
NR	07/01/17	0.961	0.942						
NR	01/01/18	0.913	0.860						
NR	06/01/18	0.981	0.844						
					1.000				

Section H - Factor Adjusting 2015 Policy Year Assigned Risk Premium and Voluntary Premium to Present Statewide Level

(1)	Assigned Risk Market Share PY 2015	0.058
(2)	Voluntary Market Share PY 2015	0.942
(3)	Assigned Risk Standard Premium Adjustment Factor (See Sec. F)	0.519
(4)	Voluntary Standard Premium Adjustment Factor (See Sec. G)	0.519
(5)	Premium Adjustment Factor = [(1)x(3)]/1.417+(2)x(4) #	0.510
(6)	Experience Rating Off-balance Adjustment Factor*	1.012
(7)	Final Premium Adjustment Factor = (5)x(6)	0.516

NR New and renewal business.
@ Eliminates premium derived from expense constants.
# Current premium index (assigned risk-to-voluntary) = 1.417
* = 1.012 = 0.952 / 0.941 = (Targeted Off-balance) / (Off-balance for Policy Year 2015)

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APPENDIX A-I

Determination of Policy Year On-level Factors

Section I - Factor Adjusting 2015 Policy Year Indemnity Losses to Present Benefit Level

	(1)	(2)	(3)	(4)	(5)
Date	Benefit Level Change	Cumulative Index	Weight	Product (2)x(3)	Adj. Factor Present Index/ Sum Column (4)
07/01/14	Base	1.000	0.169	0.169	0.931
07/01/15	1.001	1.001	0.745	0.746	
07/01/16	1.001	1.002	0.086	0.086	
07/01/17	0.913	0.915			
01/01/18	1.019	0.932			
				1.001	

Section J - Factor Adjusting 2015 Policy Year Medical Losses to Present Benefit Level

	(1)	(2)	(3)	(4)	(5)
Date	Benefit Level Change	Cumulative Index	Weight	Product (2)x(3)	Adj. Factor Present Index/ Sum Column (4)
07/01/14	Base	1.000	0.169	0.169	1.000
07/01/15	1.000	1.000	0.745	0.745	
07/01/16	1.000	1.000	0.086	0.086	
07/01/17	1.000	1.000			
01/01/18	1.000	1.000			
				1.000	

Appendix A – Factors Underlying the Proposed Rate Level Change

Appendix A-II Determination of Premium and Losses Developed to an Ultimate Report

Development factors are used to project premium and limited losses to an ultimate report. In general, the ultimate development factors are based on a chain-ladder approach that utilizes average link ratios for several maturities and the application of a tail factor, as shown in Appendix A-II Sections A through J.

Limited Large Loss Methodology

In order to limit volatility on the rate indications due to the impact of extraordinary large losses, a limited large loss methodology is used in Iowa. A base threshold for the large loss limitation is determined by the volume of premium in the state as well as the number of years used in the experience period. The base threshold proposed in this filing is $8,510,109, based on the volume of premium in policy years 2014 and 2015 underlying the currently approved filing that utilizes data valued as of 12/31/2016. The base threshold is detrended by policy year to reflect the inflationary impact on claim costs due to wage inflation. The wage index used as a basis for these calculations is the Iowa average weekly wages from the Quarterly Census of Employment and Wages (QCEW). Detrended thresholds are used in the experience period, trend period, and loss development period. Indemnity and medical losses are limited at the detrended large loss threshold corresponding to their Policy Year, as shown in Appendix A-II Section L.

Limited indemnity and medical losses used to calculate the ultimate losses are shown in Appendix A-II Section A.

After developing limited indemnity and medical losses to an ultimate report, a statewide excess ratio at the base threshold is used to adjust the limited losses to an unlimited basis. The proposed excess ratio in this filing is 1.3%, as shown in Appendix A-II Section K.

Development Factors

For premium development, link ratios are used from 1st report through 5th report. It is assumed that no further development occurs after the 5th report.

For indemnity and medical loss development, link ratios calculated from limited losses are used from 1st report through the 19th report.

For indemnity and medical loss development past the 19th report, a “tail” factor is used to reflect all future expected emergence. The calculation of indemnity and medical paid + case 19th-to-ultimate tail factors utilize all available experience for the years prior to the tail attachment point. Tail factors are calculated for the most recent ten available policy years, each relying on losses in older policy years as well as a factor to adjust for the differences in the volume of losses

between the policy years. Tail factors are calculated separately for indemnity and medical losses by comparing the changes in the volume of policy year losses that occur on policy years reported after a nineteenth report to the volume of policy year losses at the nineteenth report, along with the application of a growth adjustment factor.

Since unlimited losses are used for the tail factor, they are adjusted to a limited basis as shown in Appendix A-II Section H.

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APPENDIX A-II

Determination of Premium and Losses Developed to an Ultimate Report

Section A - Premium and Loss Summary Valued as of 12/31/2017

Policy Year 2016

(1)	Standard Earned Premium	$796,186,965
(2)	Factor to Develop Premium to Ultimate	1.007
(3)	Standard Earned Premium Developed to Ultimate = (1)x(2)	$801,760,274
(4)	Limited Indemnity Paid Losses	$42,911,061
(5)	Limited Indemnity Paid Development Factor to Ultimate	4.074
(6)	Limited Indemnity Paid Losses Developed to Ultimate = (4)x(5)	$174,819,663
(7)	Limited Indemnity Paid+Case Losses	$108,775,388
(8)	Limited Indemnity Paid+Case Development Factor to Ultimate	1.396
(9)	Limited Indemnity Paid+Case Losses Developed to Ultimate = (7)x(8)	$151,850,442
(10)	Policy Year 2016 Limited Indemnity Losses Developed to Ultimate = [(6)+(9)]/2	$163,335,053
(11)	Limited Medical Paid Losses	$125,101,142
(12)	Limited Medical Paid Development Factor to Ultimate	1.633
(13)	Limited Medical Paid Losses Developed to Ultimate = (11)x(12)	$204,290,165
(14)	Limited Medical Paid+Case Losses	$179,406,436
(15)	Limited Medical Paid+Case Development Factor to Ultimate	1.095
(16)	Limited Medical Paid+Case Losses Developed to Ultimate = (14)x(15)	$196,450,047
(17)	Policy Year 2016 Limited Medical Losses Developed to Ultimate = [(13)+(16)]/2	$200,370,106

Policy Year 2015

(1)	Standard Earned Premium	$765,680,343
(2)	Factor to Develop Premium to Ultimate	1.000
(3)	Standard Earned Premium Developed to Ultimate = (1)x(2)	$765,680,343
(4)	Limited Indemnity Paid Losses	$91,595,827
(5)	Limited Indemnity Paid Development Factor to Ultimate	2.023
(6)	Limited Indemnity Paid Losses Developed to Ultimate = (4)x(5)	$185,298,358
(7)	Limited Indemnity Paid+Case Losses	$155,484,730
(8)	Limited Indemnity Paid+Case Development Factor to Ultimate	1.190
(9)	Limited Indemnity Paid+Case Losses Developed to Ultimate = (7)x(8)	$185,026,829
(10)	Policy Year 2015 Limited Indemnity Losses Developed to Ultimate = [(6)+(9)]/2	$185,162,594
(11)	Limited Medical Paid Losses	$168,572,511
(12)	Limited Medical Paid Development Factor to Ultimate	1.332
(13)	Limited Medical Paid Losses Developed to Ultimate = (11)x(12)	$224,538,585
(14)	Limited Medical Paid+Case Losses	$205,755,156
(15)	Limited Medical Paid+Case Development Factor to Ultimate	1.075
(16)	Limited Medical Paid+Case Losses Developed to Ultimate = (14)x(15)	$221,186,793
(17)	Policy Year 2015 Limited Medical Losses Developed to Ultimate = [(13)+(16)]/2	$222,862,689

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APPENDIX A-II

Determination of Premium and Losses Developed to an Ultimate Report

Section B - Premium Development Factors

Policy Year	1st/2nd	Policy Year	2nd/3rd	Policy Year	3rd/4th	Policy Year	4th/5th
2013	1.008	2012	0.999	2011	1.000	2010	1.000
2014	1.006	2013	1.000	2012	1.000	2011	1.000
2015	1.007	2014	1.000	2013	1.000	2012	1.000
Average	1.007	Average	1.000	Average	1.000	Average	1.000

Summary of Premium Development Factors

1st/5th	2nd/5th	3rd/5th	4th/5th
1.007	1.000	1.000	1.000

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APPENDIX A-II

Determination of Premium and Losses Developed to an Ultimate Report

Section C - Limited Indemnity Paid Loss Development Factors

Policy Year	1st/2nd	Policy Year	2nd/3rd	Policy Year	3rd/4th	Policy Year	4th/5th
2013	2.001	2012	1.358	2011	1.130	2010	1.057
2014	2.001	2013	1.417	2012	1.179	2011	1.073
2015	2.040	2014	1.400	2013	1.132	2012	1.067
Average	2.014	Average	1.392	Average	1.147	Average	1.066

Policy Year	5th/6th	Policy Year	6th/7th	Policy Year	7th/8th	Policy Year	8th/9th
2009	1.043	2008	1.030	2007	1.025	2006	1.015
2010	1.046	2009	1.024	2008	1.028	2007	1.013
2011	1.026	2010	1.025	2009	1.017	2008	1.009
Average	1.038	Average	1.026	Average	1.023	Average	1.012

Policy Year	9th/10th	Policy Year	10th/11th	Policy Year	11th/12th	Policy Year	12th/13th
2005	1.011	2004	1.009	2003	1.003	2002	1.002
2006	1.007	2005	1.005	2004	1.003	2003	1.004
2007	1.012	2006	1.014	2005	1.004	2004	1.003
Average	1.010	Average	1.009	Average	1.003	Average	1.003

Policy Year	13th/14th	Policy Year	14th/15th	Policy Year	15th/16th	Policy Year	16th/17th
2001	1.002	2000	1.005	1999	1.002	1998	1.002
2002	1.007	2001	1.002	2000	1.004	1999	1.003
2003	1.007	2002	1.003	2001	1.002	2000	1.006
Average	1.005	Average	1.003	Average	1.003	Average	1.004

Policy Year	17th/18th	Policy Year	18th/19th
1997	1.002	1996	1.002
1998	1.002	1997	1.006
1999	1.002	1998	1.002
Average	1.002	Average	1.003

Determination of Premium and Losses Developed to an Ultimate Report

Section D - Limited Medical Paid Loss Development Factors

Policy Year	1st/2nd
2013	1.219
2014	1.237
2015	1.221
Average	1.226

Policy Year	2nd/3rd
2012	1.058
2013	1.063
2014	1.068
Average	1.063

Policy Year	3rd/4th
2011	1.030
2012	1.033
2013	1.031
Average	1.031

Policy Year	4th/5th
2010	1.023
2011	1.016
2012	1.017
Average	1.019

Policy Year	5th/6th
2009	1.018
2010	1.012
2011	1.008
Average	1.013

Policy Year	6th/7th
2008	1.015
2009	1.016
2010	1.010
Average	1.014

Policy Year	7th/8th
2007	1.006
2008	1.011
2009	1.022
Average	1.013

Policy Year	8th/9th
2006	1.007
2007	1.009
2008	1.009
Average	1.008

Policy Year	9th/10th
2005	1.008
2006	1.004
2007	1.008
Average	1.007

Policy Year	10th/11th
2004	1.006
2005	1.006
2006	1.020
Average	1.011

Policy Year	11th/12th
2003	1.004
2004	1.007
2005	1.005
Average	1.005

Policy Year	12th/13th
2002	1.005
2003	1.006
2004	1.005
Average	1.005

Policy Year	13th/14th
2001	1.002
2002	1.006
2003	1.005
Average	1.004

Policy Year	14th/15th
2000	1.008
2001	1.004
2002	1.007
Average	1.006

Policy Year	15th/16th
1999	1.005
2000	1.009
2001	1.000
Average	1.005

Policy Year	16th/17th
1998	1.003
1999	1.005
2000	1.005
Average	1.004

Policy Year	17th/18th
1997	1.002
1998	1.003
1999	1.004
Average	1.003

Policy Year	18th/19th
1996	1.003
1997	1.002
1998	1.002
Average	1.002

Determination of Premium and Losses Developed to an Ultimate Report

Section E - Limited Indemnity Paid + Case Loss Development Factors

Policy Year	1st/2nd	Policy Year	2nd/3rd	Policy Year	3rd/4th	Policy Year	4th/5th
2011	1.181	2010	1.081	2009	1.037	2008	1.001
2012	1.149	2011	1.097	2010	1.058	2009	1.036
2013	1.169	2012	1.080	2011	1.023	2010	0.998
2014	1.203	2013	1.075	2012	1.024	2011	1.024
2015	1.165	2014	1.102	2013	1.055	2012	1.022
Average	1.173	Average	1.087	Average	1.039	Average	1.016

Policy Year	5th/6th	Policy Year	6th/7th	Policy Year	7th/8th	Policy Year	8th/9th
2007	1.008	2006	1.013	2005	1.003	2004	1.005
2008	1.014	2007	1.005	2006	1.002	2005	1.005
2009	1.009	2008	1.005	2007	1.009	2006	1.000
2010	1.007	2009	1.004	2008	1.006	2007	0.999
2011	1.006	2010	1.001	2009	0.995	2008	1.000
Average	1.009	Average	1.006	Average	1.003	Average	1.002

Policy Year	9th/10th	Policy Year	10th/11th	Policy Year	11th/12th	Policy Year	12th/13th
2003	1.002	2002	0.997	2001	1.005	2000	1.005
2004	1.001	2003	0.998	2002	1.004	2001	1.000
2005	1.005	2004	0.999	2003	1.003	2002	1.002
2006	1.010	2005	1.003	2004	1.001	2003	1.000
2007	0.999	2006	1.006	2005	0.999	2004	0.999
Average	1.003	Average	1.001	Average	1.002	Average	1.001

Policy Year	13th/14th	Policy Year	14th/15th	Policy Year	15th/16th	Policy Year	16th/17th
1999	1.001	1998	1.000	1997	1.001	1996	1.001
2000	1.001	1999	0.999	1998	1.001	1997	0.999
2001	1.000	2000	1.000	1999	0.997	1998	1.002
2002	0.999	2001	0.999	2000	1.001	1999	1.001
2003	1.001	2002	1.001	2001	1.000	2000	1.000
Average	1.000	Average	1.000	Average	1.000	Average	1.001

Policy Year	17th/18th	Policy Year	18th/19th
1995	1.001	1994	0.999
1996	1.001	1995	1.001
1997	1.001	1996	1.002
1998	1.002	1997	0.999
1999	1.002	1998	1.000
Average	1.001	Average	1.000

Determination of Premium and Losses Developed to an Ultimate Report

Section F - Limited Medical Paid + Case Loss Development Factors

Policy Year	1st/2nd	Policy Year	2nd/3rd	Policy Year	3rd/4th	Policy Year	4th/5th
2011	1.032	2010	1.013	2009	1.005	2008	1.006
2012	1.004	2011	0.993	2010	1.005	2009	1.019
2013	1.022	2012	1.006	2011	0.986	2010	1.008
2014	1.006	2013	0.989	2012	0.985	2011	0.985
2015	1.030	2014	1.000	2013	0.999	2012	0.997
Average	1.019	Average	1.000	Average	0.996	Average	1.003

Policy Year	5th/6th	Policy Year	6th/7th	Policy Year	7th/8th	Policy Year	8th/9th
2007	1.000	2006	0.996	2005	1.001	2004	1.007
2008	1.013	2007	1.005	2006	1.009	2005	1.012
2009	1.001	2008	1.011	2007	1.001	2006	1.002
2010	0.994	2009	1.008	2008	1.003	2007	0.998
2011	0.998	2010	1.007	2009	1.011	2008	1.005
Average	1.001	Average	1.005	Average	1.005	Average	1.005

Policy Year	9th/10th	Policy Year	10th/11th	Policy Year	11th/12th	Policy Year	12th/13th
2003	1.001	2002	1.002	2001	1.000	2000	0.997
2004	0.996	2003	1.005	2002	1.002	2001	1.000
2005	1.008	2004	1.003	2003	1.003	2002	0.997
2006	1.003	2005	1.003	2004	1.000	2003	0.994
2007	0.997	2006	1.002	2005	1.003	2004	1.005
Average	1.001	Average	1.003	Average	1.002	Average	0.999

Policy Year	13th/14th	Policy Year	14th/15th	Policy Year	15th/16th	Policy Year	16th/17th
1999	1.001	1998	1.015	1997	1.001	1996	1.000
2000	1.000	1999	0.999	1998	0.999	1997	1.005
2001	1.002	2000	0.995	1999	0.999	1998	0.995
2002	1.002	2001	1.005	2000	1.015	1999	1.005
2003	1.004	2002	0.996	2001	1.000	2000	0.999
Average	1.002	Average	1.002	Average	1.003	Average	1.001

Policy Year	17th/18th	Policy Year	18th/19th
1995	1.048	1994	1.005
1996	1.024	1995	1.001
1997	1.014	1996	0.999
1998	1.008	1997	1.001
1999	0.998	1998	1.000
Average*	1.015	Average	1.001

* Excludes the years with the lowest and highest factors.

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APPENDIX A-II

Determination of Premium and Losses Developed to an Ultimate Report

Section G - Determination of Policy Year Loss Development Factors (19th-to-Ultimate Report)

Indemnity Paid+Case Data for Matching Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)
					Factor to	Indicated
Policy	Losses for Policy Year		Losses for All Prior Policy Years		Adjust Losses	19th-to-Ult Development
Year	19th Report	20th Report	Previous	Current	for Prior Policy Years	for Policy Year
1988	105,466,072	105,688,513	910,248,823	910,306,252	0.660	1.003
1989	114,362,271	114,441,268	1,012,224,979	1,012,727,987	0.640	1.008
1990	110,036,477	110,090,771	1,106,309,695	1,107,237,062	0.696	1.013
1991	98,530,504	98,529,633	1,217,327,833	1,217,908,047	0.834	1.007
1992	93,450,493	93,536,604	1,312,544,349	1,313,061,621	0.926	1.007
1993	87,319,062	87,107,611	1,406,598,225	1,406,819,743	1.030	1.000
1994	82,098,378	82,127,019	1,485,738,268	1,486,458,841	1.112	1.008
1995	85,195,400	85,284,318	1,570,622,846	1,571,748,890	1.100	1.013
1996	95,346,517	95,386,309	1,656,632,630	1,657,939,105	0.995	1.014
1997	92,836,500	92,881,504	1,752,679,678	1,753,648,636	1.035	1.011

Selected Indemnity 19th-to-Ultimate Loss Development Factor 1.010

Medical Paid+Case Data for Matching Companies

(8)	(9)	(10)	(11)	(12)	(13)	(14)
					Factor to	Indicated
Policy	Losses for Policy Year		Losses for All Prior Policy Years		Adjust Losses	19th-to-Ult Development
Year	19th Report	20th Report	Previous	Current	for Prior Policy Years	for Policy Year
1988	80,249,548	80,106,643	551,253,319	553,882,583	0.511	1.062
1989	85,996,011	86,154,548	632,126,304	635,659,045	0.522	1.081
1990	91,211,015	91,204,651	709,979,507	713,964,105	0.551	1.079
1991	89,375,740	89,378,456	805,168,756	805,273,671	0.629	1.002
1992	93,622,396	94,627,214	890,780,497	894,165,426	0.661	1.065
1993	81,422,582	81,357,885	988,792,640	987,065,646	0.834	0.974
1994	87,977,371	88,422,471	1,062,272,301	1,065,079,572	0.810	1.044
1995	84,849,798	84,914,112	1,156,303,800	1,159,113,329	0.899	1.038
1996	107,027,288	107,127,205	1,243,763,335	1,250,645,503	0.752	1.086
1997	91,721,184	91,528,274	1,357,206,721	1,350,332,693	0.938	0.918

Selected Medical 19th-to-Ultimate Loss Development Factor 1.040

(7) = 1 + [(3)-(2) + ((5)-(4)) / (6)] / (2)
(14) = 1 + [(10)-(9) + ((12)-(11)) / (13)] / (9)
Columns (4) and (11) are valued as of the date at which the given policy year is at a 19th report.
Columns (5) and (12) are valued as of the date at which the given policy year is at a 20th report.

Determination of Premium and Losses Developed to an Ultimate Report

Section H - Derivation of Policy Year Limited 19th-to-Ultimate Loss Development Factors

Policy Year	Indemnity Paid-to-Paid + Case Ratio 19th Report	Medical Paid-to-Paid + Case Ratio 19th Report
1994	0.979	0.952
1995	0.978	0.930
1996	0.972	0.950
1997	0.985	0.944
1998	0.974	0.972
Selected	0.978	0.955

	Indemnity	Medical
(1) Paid+Case 19th-to-Ultimate Loss Development Factor (Section G)	1.010	1.040
(2) Factor to Adjust 19th-to-Ultimate Development Factor to a Limited Basis	0.780	0.780
(3) Limited Paid+Case 19th-to-Ultimate Loss Development Factor = [(1)-1]x(2)+1	1.008	1.031
(4) Limited Paid-to-Paid+Case Ratio (Section H)	0.978	0.955
(5) Limited Paid 19th-to-Ultimate Loss Development Factor = (3) / (4)	1.031	1.080

Section I - Summary of Limited Paid Loss Development Factors

	(1) Indemnity Paid Loss Development	(2)		(3) Medical Paid Loss Development	(4)	
Report	to Next Report	to Ultimate		Report	to Next Report	to Ultimate	
1st	2.014	4.074		1st	1.226	1.633	
2nd	1.392	2.023		2nd	1.063	1.332	
3rd	1.147	1.453		3rd	1.031	1.253	
4th	1.066	1.267		4th	1.019	1.215	
5th	1.038	1.189		5th	1.013	1.192	
6th	1.026	1.145		6th	1.014	1.177	
7th	1.023	1.116		7th	1.013	1.161	
8th	1.012	1.091		8th	1.008	1.146	
9th	1.010	1.078		9th	1.007	1.137	
10th	1.009	1.067		10th	1.011	1.129	
11th	1.003	1.057		11th	1.005	1.117	
12th	1.003	1.054		12th	1.005	1.111	
13th	1.005	1.051		13th	1.004	1.105	
14th	1.003	1.046		14th	1.006	1.101	
15th	1.003	1.043		15th	1.005	1.094	
16th	1.004	1.040		16th	1.004	1.089	
17th	1.002	1.036		17th	1.003	1.085	
18th	1.003	1.034		18th	1.002	1.082	
19th		1.031	Section H	19th		1.080	Section H

(2) = Cumulative upward product of column (1).
(4) = Cumulative upward product of column (3).

Determination of Premium and Losses Developed to an Ultimate Report

Section J - Summary of Limited Paid+Case Loss Development Factors

	(1)	(2)			(3)	(4)	
	Indemnity Paid+Case Loss Development				Medical Paid+Case Loss Development		
Report	to Next Report	to Ultimate		Report	to Next Report	to Ultimate	
1st	1.173	1.396		1st	1.019	1.095	
2nd	1.087	1.190		2nd	1.000	1.075	
3rd	1.039	1.095		3rd	0.996	1.075	
4th	1.016	1.054		4th	1.003	1.079	
5th	1.009	1.037		5th	1.001	1.076	
6th	1.006	1.028		6th	1.005	1.075	
7th	1.003	1.022		7th	1.005	1.070	
8th	1.002	1.019		8th	1.005	1.065	
9th	1.003	1.017		9th	1.001	1.060	
10th	1.001	1.014		10th	1.003	1.059	
11th	1.002	1.013		11th	1.002	1.056	
12th	1.001	1.011		12th	0.999	1.054	
13th	1.000	1.010		13th	1.002	1.055	
14th	1.000	1.010		14th	1.002	1.053	
15th	1.000	1.010		15th	1.003	1.051	
16th	1.001	1.010		16th	1.001	1.048	
17th	1.001	1.009		17th	1.015	1.047	
18th	1.000	1.008		18th	1.001	1.032	
19th		1.008	Section H	19th		1.031	Section H

(2) = Cumulative upward product of column (1).
(4) = Cumulative upward product of column (3).

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APPENDIX A-II

Determination of Premium and Losses Developed to an Ultimate Report

Section K - Factor to Adjust Limited Losses to an Unlimited Basis

(1) Threshold at the Midpoint of the Rate Effective Period*	8,510,109
(2) Statewide Excess Ratio for (1)	0.013
(3) Market Share for Carriers Missing from Large Loss and Catastrophe Call	0.000
(4) Factor to Adjust Limited Losses to an Unlimited Basis = 1.0 / {1.0 - [(2) x (1.0 - (3))]}	1.013

Section L - Policy Year Large Loss Limits

Experience Year	Policy Year Detrended Limit
2016	7,695,111
2015	7,561,014
2014	7,345,536
2013	7,087,374
2012	6,910,572
2011	6,735,093
2010	6,537,199
2009	6,342,325
2008	6,262,459
2007	6,155,248
2006	5,940,436
2005	5,718,268
2004	5,530,395
2003	5,314,026
2002	5,104,205
2001	4,951,638
2000	4,807,991
1999	4,651,137
1998	4,483,911
1997	4,287,335
1996	4,077,078
1995	3,911,873
1994	3,788,014

* December 1, 2019 is the midpoint of the effective period for which the revised rates are being proposed.

Appendix A – Factors Underlying the Proposed Rate Level Change

Appendix A-III Trend Factors

NCCI separately analyzes a measure of the number of workplace injuries (claim frequency) and the average indemnity and medical costs of each of these injuries (claim severity). Premium, lost-time claim counts, and losses used in these frequency and severity calculations are developed to ultimate and adjusted for changes in the level of workers' wages over time using the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages for Iowa. Note that medical-only claim counts are excluded from the claim frequency and severity calculations, but the losses associated with medical-only claims are included.

While claim frequency and average costs per case are reviewed separately, NCCI selects annual indemnity and medical loss ratio trend factors based on an analysis of historical indemnity and medical loss ratios, along with other pertinent considerations, including, but not limited to, changes in system benefits and administration, economic environment, credibility of state data, and prior trend approach and selection.

The lost-time claim frequency, average costs per case, and loss ratios for Policy Years 2002 through 2016 are shown in Appendix A-III, along with the impact of the trend selection for each policy year in the experience period. The trend lengths displayed in Section B(3) are calculated by comparing the average accident date for the effective period of the proposed advisory rates to each of the policy years in the experience period. The average accident dates are based on an Iowa distribution of policy writings by month and assume a uniform probability of loss over the coverage period.

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APPENDIX A-III

Policy Year Trend Factors

Section A - Summary of Policy Year Data

(1)	(2)	(3)	(4)	(5)	(6)
	Lost-Time	Indemnity		Medical	
Policy Year	Claim Frequency*	Avg Cost Per Case*^	Loss Ratio^	Avg Cost Per Case*^	Loss Ratio^
2002	24.701	18,355	0.452	22,077	0.545
2003	24.401	19,703	0.480	23,202	0.566
2004	23.806	21,776	0.518	26,235	0.624
2005	22.191	21,535	0.478	24,693	0.548
2006	21.883	22,047	0.491	27,043	0.591
2007	21.990	23,795	0.524	28,137	0.620
2008	21.035	24,631	0.517	30,701	0.645
2009	20.169	25,693	0.518	34,266	0.691
2010	20.442	25,434	0.520	32,357	0.662
2011	18.964	24,589	0.466	31,108	0.590
2012	18.530	24,403	0.452	32,614	0.604
2013	18.652	25,869	0.482	32,851	0.612
2014	17.551	25,695	0.450	31,962	0.561
2015	16.067	27,180	0.436	35,130	0.564
2016	14.841	25,520	0.379	33,412	0.496
15yr Exponential Trend	-3.2%	2.2%	-1.1%	3.0%	-0.3%

* Figures have been adjusted to a common wage level.
^ Based on an average of paid and paid+case losses.

Section B - Summary of Annual Trend Factors

	Indemnity	Medical
(1) Current Approved Annual Loss Ratio Trend Factor	0.995	1.005
(2) Selected Annual Loss Ratio Trend Factor	**0.985**	**0.990**

(3) Length of Trend Period from Midpoint of Policy Year to Midpoint of Effective Period:

	Years
Policy Year 2015	4.001
Policy Year 2016	3.001

(4) Trend Factor Applied to Experience Year = (2) ^ (3)	Indemnity	Medical
Policy Year 2015	0.941	0.961
Policy Year 2016	0.956	0.970

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APPENDIX A-IV

Derivation of Industry Group Differentials

Industry group differentials are used to more equitably distribute the overall rate level change based on the individual experience of each industry group. The payroll, losses and claim counts used in the calculations below are from NCCI's Workers Compensation Statistical Plan (WCSP) data.

I. Expected Losses

The current expected losses (columns (1) and (2)) are the payroll extended by the pure premiums underlying the latest approved rates. The proposed expected losses (3) are the current expected losses adjusted to the proposed level. These adjustments include the proposed experience, trend, benefit and, if applicable, loss-based expense changes as well as any miscellaneous premium adjustments.

Industry Group	(1) Latest Year Current Expected Losses Prior to Adjustment for Change in Off-Balance	(2) Five Year Current Expected Losses Prior to Adjustment for Change in Off-Balance	(3) Five Year Proposed Expected Losses Prior to Adjustment for Change in Off-Balance	(4) Current Ratio of Manual to Standard Premium	(5) Proposed Ratio of Manual to Standard Premium
Manufacturing	161,602,088	767,175,412	699,271,999	1.125	1.147
Contracting	144,702,460	621,988,460	567,077,145	1.112	1.128
Office & Clerical	67,696,796	318,833,125	290,432,575	1.078	1.090
Goods & Services	237,289,440	1,088,089,405	991,059,622	1.041	1.056
Miscellaneous	106,076,170	493,033,538	449,721,355	1.085	1.100
Statewide	717,366,953	3,289,119,940	2,997,562,697		

Industry Group	(6) Latest Year Current Expected Losses Adjusted for Change in Off-Balance (1)x(4)/(5)	(7) Five Year Current Expected Losses Adjusted for Change in Off-Balance (2)x(4)/(5)	(8) Five Year Proposed Expected Losses Adjusted for Change in Off-Balance (3)x(4)/(5)	(9) Current/ Proposed (7)/(8)	(10) Adjustment to Proposed for Current Relativity (9)IG/(9)SW
Manufacturing	158,502,484	752,460,627	685,859,633	1.097	1.000
Contracting	142,649,943	613,165,928	559,033,498	1.097	1.000
Office & Clerical	66,951,510	315,323,036	287,235,153	1.098	1.001
Goods & Services	233,918,851	1,072,633,590	976,982,071	1.098	1.001
Miscellaneous	104,629,677	486,310,353	443,588,791	1.096	0.999
Statewide	706,652,465	3,239,893,534	2,952,699,146	1.097	

II. Industry Group Differentials

To calculate the converted indicated balanced losses (11) the reported losses are limited to $500,000 for a single claim occurrence and $1,500,000 for each multiple claim occurrence. After the application of limited development, trend and benefit factors, the limited losses are brought to an unlimited level through the application of the expected excess provision. The proposed experience change, applicable loss-based expenses and any miscellaneous premium adjustments are applied to calculate the indicated losses. These indicated losses are then balanced to the expected losses using the factors shown in Appendix B-I, Section A-3.

Industry Group	(11) Converted Indicated Balanced Losses	(12) Indicated/ Expected Ratio (11)/[(8)x(10)]	(13) Indicated Differential (12)IG/(12)SW	(14) Lost-Time Claim Counts
Manufacturing	688,473,136	1.004	1.004	13,157
Contracting	559,388,017	1.001	1.001	7,374
Office & Clerical	299,775,840	1.043	1.043	5,197
Goods & Services	961,118,707	0.983	0.983	21,851
Miscellaneous	445,808,277	1.006	1.006	6,607
Statewide	2,954,563,977	1.000		

Industry Group	(15) Full Credibility Standard for Lost-Time Claim Counts	(16) Credibility Minimum of 1.000 and ((14)/(15))^0.5	(17) Credibility Weighted Indicated/Expected Ratio [(16)IGx(12)IG] + [1-(16)IG]x(12)SW*	(18) Final Industry Group Differential (17)IG/(17)SW
Manufacturing	12,000	1.00	1.004	1.005
Contracting	12,000	0.78	1.001	1.002
Office & Clerical	12,000	0.66	1.028	1.029
Goods & Services	12,000	1.00	0.983	0.984
Miscellaneous	12,000	0.74	1.004	1.005
Statewide			0.999	1.000

*Statewide ratio (column 17) = $\Sigma_{IG}[(6)x(17)] \div \Sigma_{IG}(6)$

Iowa

Workers Compensation Rate Filing – January 1, 2019

Appendix B – Calculations Underlying the Advisory Rate Change by Classification

NCCI separately determines voluntary rates for each workers compensation classification. The proposed change from the current rate will vary depending on the classification. The following are the general steps utilized to determine the individual classification rates:

1. Calculate industry group differentials, which are used to more equitably distribute the proposed overall average advisory rate level change based on the individual experience of each industry group
2. For each classification, determine the indicated pure premiums based on the most recently-available five policy periods of Iowa payroll and loss experience
3. Indicated pure premiums are credibility-weighted with present on rate level pure premiums and national pure premiums to generate derived by formula pure premiums
4. Final adjustments include the application of a test correction factor, the ratio of manual-to-standard premium, and swing limits.

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APPENDIX B-I

Distribution of Rate Change to Occupational Classification

After determining the required changes in the overall rate level for the state and by industry group, the next step in the ratemaking procedure is to distribute these changes among the various occupational classifications. In order to do this, the pure premiums by classification must be adjusted, by policy period, industry group, or on an overall basis, to incorporate the changes proposed in the filing. There are three sets of pure premiums for each classification: indicated, present on rate level, and national pure premiums.

Section A – Calculation of Indicated Pure Premiums

The indicated pure premiums are calculated from the payroll and loss data reported, by class code and policy period, in the Workers Compensation Statistical Plan (WCSP) for the latest available five policy periods. Various adjustments are made to these pure premiums to put them at the level proposed in this filing (Sections A-1 to A-3).

Section A-1 – Calculation of Primary Conversion Factors

1. Limited Loss Development Factors

The following factors are applied to develop the losses from first through fifth report to an ultimate basis.

Policy Period	Indemnity		Medical	
	Likely-to-Develop	Not-Likely-to-Develop	Likely-to-Develop	Not-Likely-to-Develop
3/11-2/12	1.065	1.019	1.230	1.020
3/12-2/13	1.091	1.041	1.250	1.022
3/13-2/14	1.153	1.086	1.256	1.024
3/14-2/15	1.335	1.202	1.276	1.031
3/15-2/16	1.890	1.403	1.351	1.053

2. Factors to Adjust to the Proposed Trend Level

The proposed trend factors are applied to adjust the losses to the proposed level.

Policy Period	Indemnity	Medical
3/11-2/12	0.889	0.925
3/12-2/13	0.902	0.934
3/13-2/14	0.916	0.943
3/14-2/15	0.930	0.953
3/15-2/16	0.944	0.963

3. Factors to Adjust to the July 1, 2018 Benefit Level

The following factors are applied to adjust the losses to the proposed benefit level.

Policy Period	Fatal	Permanent Total (P.T.)	Permanent Partial (P.P.)	Temporary Total (T.T.)	Medical
3/11-2/12	1.011	1.026	0.901	1.026	1.000
3/12-2/13	1.010	1.025	0.901	1.025	1.000
3/13-2/14	1.009	1.024	0.900	1.024	1.000
3/14-2/15	1.008	1.024	0.900	1.024	1.000
3/15-2/16	1.007	1.023	0.899	1.023	1.000

4. Primary Conversion Factors: Indicated Pure Premiums

The factors above, contained within Section A-1, are combined multiplicatively, resulting in the following factors for the Likely-to-Develop (L) and Not-Likely-to-Develop (NL) groupings.

Policy Period	Fatal (L)	Fatal (NL)	P.T.*	P.P. (L)	P.P. (NL)	T.T. (L)	T.T. (NL)	Medical (L)	Medical (NL)
3/11-2/12	0.957	0.916	0.971	0.853	0.816	0.971	0.929	1.138	0.944
3/12-2/13	0.994	0.948	1.009	0.887	0.846	1.009	0.962	1.168	0.955
3/13-2/14	1.066	1.004	1.081	0.951	0.895	1.081	1.019	1.184	0.966
3/14-2/15	1.251	1.127	1.271	1.117	1.006	1.271	1.145	1.216	0.983
3/15-2/16	1.797	1.334	1.825	1.604	1.191	1.825	1.355	1.301	1.014

* Permanent total losses are always assigned to the Likely-to-Develop grouping.

Section A-2 – Expected Excess Provision and Redistribution

After the application of the primary conversion factors, the limited losses are brought to an expected unlimited level through the application of excess loss factors by hazard group. These factors are shown below.

Hazard Group	A	B	C	D	E	F	G
(1) Excess Ratios	0.115	0.152	0.172	0.204	0.243	0.280	0.330
(2) Excess Factors 1/(1-(1))	1.130	1.179	1.208	1.256	1.321	1.389	1.493

As the excess loss factors are on a combined (indemnity and medical) basis, a portion (40%) of the indemnity expected excess losses are redistributed to medical in order to more accurately allocate expected excess losses. Since a portion of the expected excess losses are redistributed in an additive manner, the expected excess factors shown above cannot be combined multiplicatively with either the primary or secondary loss conversion factors.

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APPENDIX B-I

Section A-3 – Calculation of Secondary Conversion Factors

1. Factors to Adjust for Proposed Industry Group Differentials

The following factors are applied to adjust the indicated industry group differentials for the effects of credibility weighting the industry group differentials and weighting the differentials by the latest year expected losses.

	Manufacturing	Contracting	Office and Clerical	Goods and Services	Miscellaneous
(1) Indicated Differentials*	1.004	1.001	1.043	0.983	1.006
(2) Final Differentials**	1.005	1.002	1.029	0.984	1.005
(3) Adjustment (2)/(1)	1.001	1.001	0.987	1.001	0.999

*See Appendix A-IV, column (13).
**See Appendix A-IV, column (18).

2. Factors to Balance Indicated to Expected Losses

The expected losses are calculated as the pure premium underlying the current rates, adjusted to the proposed level and adjusted for the Experience Rating Plan off-balance. The indicated losses are balanced to the expected losses by applying the following factors.

Policy Period	(1) Adjustment of Indicated Losses to Pure Premium at Proposed Level	(2) Current Ratio of Manual to Standard Premium	(3) Proposed Ratio of Manual to Standard Premium	(4) Off-balance Adjustment (2)/(3)	(5) Balancing Indicated to Expected Losses (1)x(4)
3/11-2/12	0.854	1.084	1.052	1.030	0.880
3/12-2/13	0.832	1.084	1.080	1.004	0.835
3/13-2/14	0.809	1.084	1.102	0.984	0.796
3/14-2/15	0.847	1.084	1.129	0.960	0.813
3/15-2/16	0.865	1.084	1.130	0.959	0.830

3. Adjustment for Experience Change

A factor of 0.951 is applied to adjust for the experience change in the proposed rate level.

4. Factor to Reflect the Proposed Loss-Based Expense Provisions

A factor of 1.157 is applied to include the proposed loss-based expense provisions.

5. Secondary Conversion Factors: Indicated Pure Premiums

The factors above, contained within section A-3, are combined multiplicatively, resulting in the following factors:

Policy Period	Manufacturing	Contracting	Office and Clerical	Goods and Services	Miscellaneous
3/11-2/12	0.969	0.969	0.956	0.969	0.967
3/12-2/13	0.920	0.920	0.907	0.920	0.918
3/13-2/14	0.877	0.877	0.864	0.877	0.875
3/14-2/15	0.895	0.895	0.883	0.895	0.894
3/15-2/16	0.914	0.914	0.901	0.914	0.912

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APPENDIX B-I

Section B – Calculation of Present on Rate Level Pure Premiums

The present on rate level pure premiums are the pure premiums underlying the current rates, adjusted to the proposed level. The data sources for the above-captioned pure premiums are the partial pure premiums underlying the current rates.

1. Adjustment for Experience Change

A factor of 0.951 is applied to adjust for the experience change in the proposed rate level.

2. Factors to Adjust to the Proposed Trend Level

The pure premiums underlying the current rates contain the current trend. The change in trend factors, 0.965 and 0.949, for indemnity and medical, respectively, are applied to adjust to the proposed trend level.

3. Factors to Adjust to the July 1, 2018 Benefit Level

The pure premiums underlying the current rates are at the current January 1, 2018 level. The following factors are applied to adjust to the proposed benefit level.

Effective Date	Indemnity	Medical
July 1, 2018	1.001	1.000

4. Factors to Include the Proposed Loss-Based Expense Provisions

The pure premiums underlying the current rates include the current loss-based expense provisions and must be adjusted to the proposed level.

	(a) Current		(b) Proposed	
	Indemnity	Medical	Indemnity	Medical
(1) Loss Adjustment Expense	1.154	1.154	1.157	1.157
(2) Loss-based Assessment	1.000	1.000	1.000	1.000
(3) = (1) + (2) – 1.000	1.154	1.154	1.157	1.157
(4) Overall Change (3b)/(3a)			1.003	1.003

5. Adjustment to Obtain Expected Losses

The pure premiums underlying the current rates reflect the current Experience Rating Plan off-balance. The change in off-balance must be applied.

Industry Group	(1) Current Ratio of Manual to Standard Premium	(2) Proposed Ratio of Manual to Standard Premium	(3) Off-balance Adjustment (1)/(2)
Manufacturing	1.125	1.147	0.981
Contracting	1.112	1.128	0.986
Office & Clerical	1.078	1.090	0.989
Goods & Services	1.041	1.056	0.986
Miscellaneous	1.085	1.100	0.986

6. Factors to Adjust for Proposed Industry Group Differentials

The pure premiums underlying the current rates are adjusted by the proposed industry group differentials.

Industry Group	(1) Final Differential*	(2) Adjustment to Proposed for Current Relativities**	(3) Adjusted Differential (1)x(2)
Manufacturing	1.005	1.000	1.005
Contracting	1.002	1.000	1.002
Office & Clerical	1.029	1.001	1.030
Goods & Services	0.984	1.001	0.985
Miscellaneous	1.005	0.999	1.004

*See Appendix A-IV, column (18).
**See Appendix A-IV, column (10).

7. Combined Conversion Factors

The factors above, contained within Section B, are combined multiplicatively, resulting in the following factors.

Industry Group	Indemnity	Medical
Manufacturing	0.908	0.892
Contracting	0.910	0.894
Office & Clerical	0.938	0.922
Goods & Services	0.894	0.879
Miscellaneous	0.912	0.896

Section C – Calculation of National Pure Premiums

Finally, there are the national pure premiums, which reflect the countrywide experience for each classification adjusted to state conditions. These pure premiums reflect the countrywide experience for each classification as indicated by the latest available individual classification experience for all states for which the National Council on Compensation Insurance compiles workers compensation data.

Countrywide data is adjusted to Iowa conditions in four steps. First, statewide indicated pure premiums are determined for Iowa. Second, using Iowa payrolls as weights, corresponding statewide-average pure premiums are computed for each remaining state. Third, the ratios of Iowa statewide pure premiums to those for other states are used as adjustment factors to convert losses for other states to a basis that is consistent with the Iowa indicated pure premiums. The quotient of the countrywide total of such adjusted losses divided by the total countrywide payroll for the classification is the initial pure premium indicated by national relativity. Finally, national pure premiums are balanced to the level of the state indicated pure premiums to ensure unbiased derived by formula pure premiums. Indemnity and medical pure premiums are computed separately.

Section D – Calculation of Derived by Formula Pure Premiums

The indicated, present on rate level and national pure premiums are credibility weighted, and the resulting derived by formula pure premiums are used to determine the final class rates.

As for the preceding pure premiums, separate computations are performed for each partial pure premium: indemnity and medical. Each partial formula pure premium is derived by the weighting of the indicated, present on rate level and national partial pure premiums. The weight assigned to the policy year indicated pure premium varies in one-percent intervals from zero percent to one hundred percent, depending upon the volume of expected losses (i.e. the product of the underlying pure premiums and the payroll in hundreds). To achieve full state credibility, a classification must have expected losses of at least: $38,576,165 for indemnity and $26,079,746 for medical.

The partial credibilities formula is:

$$z = [\text{ (expected losses) / (full credibility standard) }]^{0.5}$$

For the national pure premiums, credibility is determined from the number of lost-time claims. Full credibility standards are: 2,300 lost-time claims for indemnity and 2,000 lost-time claims for medical.

Partial credibilities are assigned using a credibility formula similar to that used for indicated pure premiums but based on the number of national cases. In no case is the national credibility permitted to exceed 50% of the complement of the state credibility.

National Credibility equals the smaller of:

$$[\text{ (national cases)/(full credibility standard) }]^{0.5} \text{ and } [\text{ (1 – state credibility)/2 }]$$

The residual credibility (100% minus the sum of the state and national credibilities) is assigned to the present on rate level pure premium.

For example, if the state credibility is 40%, the national pure premium is assigned a maximum credibility of 30% ((100-40) / 2). The remainder is assigned to the present on rate level pure premium.

The total pure premium shown on the attached Appendix B-III is obtained by adding the indemnity and medical partial pure premiums obtained above and rounding the sum to two decimal places.

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APPENDIX B-II

Adjustments to Obtain Rates

The following items are combined with the derived by formula pure premium to obtain the proposed rate:

1. Test Correction Factor

The payrolls are now extended by the rates presently in effect and by the indicated rates to determine if the required change in manual premium level as calculated in Exhibit I has been achieved. Since at first this calculation may not yield the required results, an iterative process is initiated which continuously tests the proposed rates including tentative test correction factors until the required change in manual premium level is obtained. The test correction factor is applied to the derived by formula pure premiums.

The factors referred to above are set out as follows:

	Test Correction Factor
Manufacturing	1.0027
Contracting	1.0023
Office & Clerical	1.0042
Goods & Services	1.0013
Miscellaneous	1.0090

2. Ratios of Manual to Standard Premiums

The ratios of manual to standard premiums by industry group have also been excluded from the classification experience, and it is necessary to apply these factors to the derived by formula pure premiums.

	Ratio of Manual to Standard Premiums
Manufacturing	1.147
Contracting	1.128
Office & Clerical	1.090
Goods & Services	1.056
Miscellaneous	1.100

3. Expense Allowance

The expense allowance is introduced into the rate by dividing the product of the proposed pure premium and the appropriate factors above by the proposed target cost ratio of 0.748 (see Exhibit II-A for derivation of this factor). This operation produces the proposed rate prior to the addition of a disease loading, if any.

4. Disease Loadings

The proposed manual rates shown in this filing include specific disease loadings for those classifications where they apply. The proposed specific disease loadings are shown on the footnotes page.

5. Swing Limits

As a further step, a test is made to make certain that the proposed rates fall within the following departures from the present rates:

Manufacturing	from 16% above to 34% below
Contracting	from 16% above to 34% below
Office & Clerical	from 18% above to 32% below
Goods & Services	from 14% above to 36% below
Miscellaneous	from 16% above to 34% below

These limits have been calculated in accordance with the following formula:

Max. Deviation = Effect of the final change in rate level by industry group plus or minus 25% rounded to the nearest 1%.

The product of the swing limits and the present rate sets bounds for the proposed rate. If the calculated rate falls outside of the bounds, the closest bound is chosen as the proposed rate. When a code is limited, the underlying pure premiums are adjusted to reflect the limited rate. The classifications which have been so limited are shown below. Note that classifications that are subject to special handling may fall outside of the swing limits.

An illustrative example showing the calculation of a proposed manual class rate is attached as Appendix B-III. This example demonstrates the manner in which the partial pure premiums are combined to produce a total pure premium, and shows the steps in the calculation at which the rounding takes place. The rates for other classifications are calculated in the same manner.

List of Classifications Limited by the Upper Swing	List of Classifications Limited by the Lower Swing
8856	7710

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APPENDIX B-III

Derivation of Proposed Rate - Code 8810

As previously explained in Appendix B-I, the indicated pure premiums are developed by adjusting the limited losses by a set of conversion factors. The converted losses are then summarized into indemnity and medical and then divided by payroll (in hundreds). The derivation of the indicated pure premium for the above-captioned classification follows:

LIMITED LOSSES (Workers Compensation Statistical Plan)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
03/01/11 - 02/29/12	0	0	0	2,529,294	2,932,257	369,853	433,388	2,253,012	6,803,385
03/01/12 - 02/28/13	0	2,340	0	1,178,353	2,931,268	597,900	854,312	1,156,746	6,875,611
03/01/13 - 02/28/14	0	0	0	1,711,469	2,703,510	750,249	1,443,007	2,042,321	7,097,574
03/01/14 - 02/28/15	0	181,412	0	709,081	1,704,124	828,135	691,570	1,661,043	5,406,082
03/01/15 - 02/29/16	0	489,155	0	503,117	1,165,512	563,814	568,981	1,267,005	5,293,905

PRIMARY CONVERSION FACTORS (Appendix B-I, Section A-1)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
03/01/11 - 02/29/12	0.957	0.916	0.971	0.853	0.816	0.971	0.929	1.138	0.944
03/01/12 - 02/28/13	0.994	0.948	1.009	0.887	0.846	1.009	0.962	1.168	0.955
03/01/13 - 02/28/14	1.066	1.004	1.081	0.951	0.895	1.081	1.019	1.184	0.966
03/01/14 - 02/28/15	1.251	1.127	1.271	1.117	1.006	1.271	1.145	1.216	0.983
03/01/15 - 02/29/16	1.797	1.334	1.825	1.604	1.191	1.825	1.355	1.301	1.014

EXPECTED EXCESS PROVISION AND REDISTRIBUTION (Appendix B-I, Section A-2)

After the application of the primary conversion factors, the limited losses are brought to an expected unlimited level through the application of a hazard group-specific excess loss factor. The factor is shown below:

	HAZARD GROUP: C
Excess Factor	1.208

As the excess loss factor is on a combined (indemnity and medical) basis, the following portion of the indemnity expected excess losses are redistributed to medical in order to more accurately allocate expected excess losses:

Redistribution %	40%

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APPENDIX B-III

Derivation of Proposed Rate - Code 8810

EXPECTED UNLIMITED LOSSES (Limited Losses x Primary Conversion Factors, then adjusted for the Excess Provision and Redistribution)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
03/01/11 - 02/29/12	0	0	0	2,426,392	2,690,945	403,888	452,798	3,305,641	7,988,786
03/01/12 - 02/28/13	0	2,495	0	1,175,470	2,788,936	678,472	924,281	1,768,713	8,204,733
03/01/13 - 02/28/14	0	0	0	1,830,468	2,721,220	912,103	1,653,694	3,123,050	8,603,734
03/01/14 - 02/28/15	0	229,933	0	890,762	1,928,022	1,183,749	890,542	2,592,678	6,643,323
03/01/15 - 02/29/16	0	733,863	0	907,583	1,561,137	1,157,209	867,061	2,143,344	6,716,739

SECONDARY CONVERSION FACTORS (Appendix B-I, Section A-3)

Policy Period	INDUSTRY GROUP: Office and Clerical
03/01/11 - 02/29/12	0.956
03/01/12 - 02/28/13	0.907
03/01/13 - 02/28/14	0.864
03/01/14 - 02/28/15	0.883
03/01/15 - 02/29/16	0.901

PAYROLL, FINAL CONVERTED LOSSES (Expected Unlimited Losses x Secondary Conversion Factors)

Policy Period	Payroll	Indemnity Likely	Indemnity Not-Likely	Medical Likely	Medical Not-Likely	Total Indemnity	Total Medical	Total
03/01/11 - 02/29/12	11,081,943,113	2,705,748	3,005,418	3,160,193	7,637,279	5,711,166	10,797,472	16,508,638
03/01/12 - 02/28/13	9,007,933,264	1,681,525	3,370,151	1,604,223	7,441,693	5,051,676	9,045,916	14,097,592
03/01/13 - 02/28/14	9,337,115,813	2,369,581	3,779,926	2,698,315	7,433,626	6,149,507	10,131,941	16,281,448
03/01/14 - 02/28/15	9,540,372,373	1,831,793	2,691,823	2,289,335	5,866,054	4,523,616	8,155,389	12,679,005
03/01/15 - 02/29/16	9,732,796,574	1,860,378	2,849,017	1,931,153	6,051,782	4,709,395	7,982,935	12,692,330
Total	48,700,161,137	10,449,025	15,696,335	11,683,219	34,430,434	26,145,360	46,113,653	72,259,013
		INDICATED PURE PREMIUM				**0.054**	**0.095**	**0.15**

The present on rate level pure premiums are developed by adjusting the pure premiums underlying the current rate by the conversion factors calculated in Appendix B-I. The derivation of the present on rate level pure premiums for the above-captioned classification follows:

	Indemnity	Medical	Total
Pure Premiums Underlying Current Rate	0.056	0.114	0.17
Conversion Factors (App. B-I, Section B)	0.938	0.922	xxx
PURE PREMIUMS PRESENT ON RATE LEVEL (Underlying Pure Premiums) x (Conversion Factor)	0.053	0.105	0.16

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APPENDIX B-III

Derivation of Proposed Rate - Code 8810
Industry Group - Office and Clerical, Hazard Group - C

The rate for the above-captioned classification is derived as follows:

		Indemnity	Medical	Total
1.	Indicated Pure Premium	0.054	0.095	0.15
2.	Pure Premium Indicated by National Relativity	0.049	0.081	0.13
3.	Pure Premium Present on Rate Level	0.053	0.105	0.16
4.	State Credibilities	81%	100%	xxx
5.	National Credibilities	9%	0%	xxx
6.	Residual Credibilities = 100% - (4) - (5)	10%	0%	xxx
7.	Derived by Formula Pure Premiums = (1) x (4) + (2) x (5) + (3) x (6)	0.053	0.095	0.15
8.	Test Correction Factor	1.0042	1.0042	xxx
9.	Underlying Pure Premiums = (7) x (8) *	0.055	0.095	0.15
10.	Ratio of Manual to Standard Premium			1.090
11.	Target Cost Ratio			0.748
12.	Rate = (9) x (10) / (11)			0.22
13.	Rate Within Swing Limits			0.22
	Current Rate x Swing Limits a) Lower bound = 0.25 x 0.680 = 0.17 b) Upper bound = 0.25 x 1.180 = 0.29			
14.	Pure Premiums Underlying Proposed Rate* = ((14TOT) / (9TOT)) x (9) ; (14TOT) = (13) x (11) / (10)	0.055	0.095	0.15
15.	Disease, Catastrophe and/or Miscellaneous Loadings			0.00
16.	Final Loaded Rate			0.22

* Indemnity pure premium is adjusted for the rounded total pure premium:
Indemnity Pure Premium = Total Pure Premium - Medical Pure Premium

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APPENDIX B-IV

I. Determination and Distribution of Premium Level Change to "F" Classifications

The Workers Compensation Statistical Plan (WCSP) data is used to determine the overall "F" classifications (F-class) premium level change as well as the individual change by the various classifications. There are three sets of pure premiums for each classification: indicated, present on rate level, and national pure premiums. All sets of pure premiums are adjusted to the common proposed level that is explained further in this exhibit. These three sets of pure premiums are credibility weighted and the results, the derived by formula pure premiums, are adjusted for additional proposed components (Section II) to determine the indicated rates. The payrolls are extended by the rates presently in effect and by the indicated rates. The rates are limited to the swing limits based on 25% above and 25% below the current rates. This results in the indicated rate level change of -0.4%.

Section A – Calculation of F-Class Indicated Pure Premiums

The payroll and loss data reported are from the WCSP data by class code for the latest available five policy periods.

Section A-1 – Calculation of Primary Conversion Factors

1. Factors to Adjust to the Proposed Benefit Levels

The state losses are adjusted to the July 1, 2018 state law level. The federal losses are adjusted to the October 1, 2017 federal law level.

STATE ACT

Policy Period	Fatal	Permanent Total (P.T.)	Permanent Partial (P.P.)	Temporary Total (T.T.)	Medical
1/11 - 12/11	1.011	1.026	0.901	1.026	1.000
1/12 - 12/12	1.010	1.025	0.901	1.025	1.000
1/13 - 12/13	1.009	1.024	0.900	1.024	1.000
1/14 - 12/14	1.008	1.024	0.900	1.024	1.000
1/15 - 12/15	1.007	1.023	0.899	1.023	1.000

FEDERAL ACT

Policy Period	Fatal	Permanent Total (P.T.)	Permanent Partial (P.P.)	Temporary Total (T.T.)	Medical
1/11 - 12/11	1.028	1.023	1.010	1.023	1.000
1/12 - 12/12	1.022	1.019	1.008	1.019	1.000
1/13 - 12/13	1.018	1.015	1.006	1.015	1.000
1/14 - 12/14	1.015	1.012	1.005	1.012	1.000
1/15 - 12/15	1.011	1.008	1.003	1.008	1.000

2. Factors to Adjust to the Proposed Trend Level

The following factors are applied to trend the losses in each policy year to the proposed rating year. The selected annual trends utilized were 0.985 and 0.990 for indemnity and medical, respectively.

Policy Period	Indemnity	Medical
1/11 - 12/11	0.886	0.923
1/12 - 12/12	0.900	0.932
1/13 - 12/13	0.913	0.941
1/14 - 12/14	0.927	0.951
1/15 - 12/15	0.941	0.961

Section A-1 Calculation of Primary Conversion Factors (continued)

3. Limited Loss Development Factors

The following factors are applied to develop the losses from first through fifth report to an ultimate basis utilizing countrywide data.

Policy Period	Indemnity		Medical	
	Likely-to-Develop	Not-Likely-to-Develop	Likely-to-Develop	Not-Likely-to-Develop
1/11 - 12/11	1.093	1.030	1.196	1.036
1/12 - 12/12	1.124	1.052	1.220	1.041
1/13 - 12/13	1.245	1.116	1.253	1.067
1/14 - 12/14	1.412	1.212	1.337	1.089
1/15 - 12/15	2.198	1.728	1.571	1.145

4. Primary Conversion Factors = (1) x (2) x (3)

The factors above contained within Section A-1, are combined multiplicatively, resulting in the following factors for the Likely-to-Develop (L) and Not-Likely-to-Develop (NL) groupings.

STATE ACT

Policy Period	Fatal (L)	Fatal (NL)	P.T.*	P.P. (L)	P.P. (NL)	T.T. (L)	T.T. (NL)	Medical (L)	Medical (NL)
1/11 - 12/11	0.979	0.923	0.994	0.873	0.822	0.994	0.936	1.104	0.956
1/12 - 12/12	1.022	0.956	1.037	0.911	0.853	1.037	0.970	1.137	0.970
1/13 - 12/13	1.147	1.028	1.164	1.023	0.917	1.164	1.043	1.179	1.004
1/14 - 12/14	1.319	1.133	1.340	1.178	1.011	1.340	1.150	1.271	1.036
1/15 - 12/15	2.083	1.637	2.116	1.859	1.462	2.116	1.663	1.510	1.100

FEDERAL ACT

Policy Period	Fatal (L)	Fatal (NL)	P.T.*	P.P. (L)	P.P. (NL)	T.T. (L)	T.T. (NL)	Medical (L)	Medical (NL)
1/11 - 12/11	0.996	0.938	0.991	0.978	0.922	0.991	0.934	1.104	0.956
1/12 - 12/12	1.034	0.968	1.031	1.020	0.954	1.031	0.965	1.137	0.970
1/13 - 12/13	1.157	1.037	1.154	1.144	1.025	1.154	1.034	1.179	1.004
1/14 - 12/14	1.329	1.140	1.325	1.315	1.129	1.325	1.137	1.271	1.036
1/15 - 12/15	2.091	1.644	2.085	2.075	1.631	2.085	1.639	1.510	1.100

** Permanent Total losses are always assigned to the Likely-to-Develop grouping.*

Section A-2 – Expected Excess Provision and Redistribution

To reduce distortions in individual class rate indications, individual claim amounts are subject to a maximum limit of $500,000. Multiple claim accidents are limited to three times the individual claim loss limitation. After the application of the primary conversion factors, the limited losses are brought to an expected unlimited level through the application of excess loss factors by hazard group. These factors are shown below.

Hazard Group	A	B	C	D	E	F	G
(1) Excess Ratios	0.115	0.152	0.172	0.204	0.243	0.280	0.330
(2) Excess Factors 1/(1-(1))	1.130	1.179	1.208	1.256	1.321	1.389	1.493

As the excess loss factors are on a combined (indemnity and medical) basis, a portion (40%) of the indemnity expected excess losses are redistributed to medical in order to more accurately allocate expected excess losses. Since a portion of the expected excess losses are redistributed in an additive manner, the expected excess factors shown above cannot be combined multiplicatively with either the primary or secondary loss conversion factors.

Section A-3 – Calculation of Secondary Conversion Factors

The following factors are applied to include the proposed loss-based expenses. The state losses are adjusted to reflect the proposed loss-based expenses. The federal losses are adjusted to reflect the proposed USL&HW Special Fund Assessment and loss adjustment expense. The combined** factors are based on a combined indemnity and medical loss-weighted average of the above loss-based expenses by policy period.

Policy Period	State Act	Federal Act
1/11 - 12/11	1.157	1.184
1/12 - 12/12	1.157	1.188
1/13 - 12/13	1.157	1.222
1/14 - 12/14	1.157	1.157
1/15 - 12/15	1.157	1.214

** *See Section B.3 for the indemnity and medical breakdown of the proposed loss-based expenses.*

Section B – Present on Rate Level

1. Benefits

The current underlying pure premiums are at the current January 1, 2018 state and October 1, 2016 federal law levels. These pure premiums are adjusted to reflect the weighted effect of state and federal laws which bring losses to the proposed July 1, 2018 state and October 1, 2017 federal law levels. The distribution of state and federal losses in regard to total losses was used to determine the weighted effects.

State Weight (St%)	0.229
Federal Weight (Fed%)	0.771

	Indemnity	Medical	Total
(a) State Laws	1.001	1.000	1.000
(b) Federal Laws	1.003	1.000	1.002
(c) Weighted Laws = [(a)xSt%] + [(b)xFed%]	1.003	1.000	1.002

2. Trend

Since the trend in the current underlying pure premiums is adequate for the current rating year, additional trend is applied to bring the underlyings to the proposed rating year.

Indemnity	Medical
0.985	0.990

Section B – Present on Rate Level (continued)

3. Loss-Based Expenses

The current underlying pure premiums are adjusted to reflect the change in the weighted effect of the loss-based expense provisions.

Proposed:

STATE ACT

	Indemnity	Medical	Total
(a) Loss Adjustment Expense	1.157	1.157	1.157
(b) Loss-Based Assessment	1.000	1.000	1.000
(c) Total = (a) + (b) - 1	1.157	1.157	1.157

FEDERAL ACT

	Indemnity	Medical	Total
(d) Loss Adjustment Expense	1.157	1.157	1.157
(e) Loss-Based Assessment	1.119	1.000	1.071
(f) Total = (d) + (e) - 1	1.276	1.157	1.228

	Indemnity	Medical	Total
(g) Weighted Proposed Expenses = [(c) x St%] + [(f) x Fed%]	1.249	1.157	1.212

Current:

STATE ACT

	Indemnity	Medical	Total
(h) Loss Adjustment Expense	1.154	1.154	1.154
(i) Loss-Based Assessment	1.000	1.000	1.000
(j) Total = (h) + (i) - 1	1.154	1.154	1.154

FEDERAL ACT

	Indemnity	Medical	Total
(k) Loss Adjustment Expense	1.154	1.154	1.154
(l) Loss-Based Assessment	1.116	1.000	1.064
(m) Total = (k) + (l) - 1	1.270	1.154	1.218

	Indemnity	Medical	Total
(n) Weighted Current Expenses = [(j) x St%] + [(m) x Fed%]	1.243	1.154	1.203

Change:

	Indemnity	Medical	Total
Weighted Expense Change in Loss-Based Expenses = [(g) / (n)]	1.005	1.003	1.007

4. Conversion Factors = (1) x (2) x (3)

The factors have been applied multiplicatively resulting in the following factors.

Indemnity	Medical
0.993	0.993

Section C – National Pure Premiums

The latest three years of state and federal losses for states in which NCCI compiles workers compensation data are separately adjusted to the same level as the indicated and present on rate level pure premiums.

Class Code 9077

For Code 9077, the indicated, national and present on rate level pure premiums were calculated as described previously in Sections A, B and C but using the non-appropriated benefit changes and the federal loss-based expenses.

Section D – Derived by Formula Pure Premiums

The derived by formula pure premiums are calculated by a process similar to that of the industrial codes, which is described in Appendix B-I, Section D. To achieve full state credibility, a classification must have expected losses of at least: $119,759,900 for indemnity and $53,647,200 for medical.

II. Calculation of Proposed Rates

The following items are combined with the derived by formula pure premiums to obtain the proposed rate:

A. Test Correction Factor	**1.0000**
B. Ratio of Manual Premium to Earned Premium (determined on a countrywide basis)	**1.215**
C. Expense Allowance	**0.748**

The expense allowance is introduced into the rate by dividing the product of the proposed pure premiums and the appropriate factors above by the proposed target cost ratio.

D. Swing Limits

No classifications were adjusted on account of swing limits.

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APPENDIX B-IV

Derivation of Proposed Rate - Code 6872

The indicated pure premiums are developed by adjusting the limited losses by a set of conversion factors. The converted losses are then summarized into indemnity and medical and then divided by payroll (in hundreds). The derivation of the indicated pure premium for the above-captioned classification follows:

STATE ACT - LIMITED LOSSES (Workers Compensation Statistical Plan)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0	0	0	0	0	0	0	0	93
01/01/12 - 12/31/12	0	0	0	0	0	0	0	0	0
01/01/13 - 12/31/13	0	0	0	0	426,681	0	0	0	168,966
01/01/14 - 12/31/14	0	0	0	0	8,803	0	0	0	27,629
01/01/15 - 12/31/15	0	0	0	0	0	0	0	0	11,591

FEDERAL ACT - LIMITED LOSSES (Workers Compensation Statistical Plan)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0	0	0	0	0	0	0	0	4,617
01/01/12 - 12/31/12	0	0	0	0	0	0	0	0	0
01/01/13 - 12/31/13	0	0	0	0	0	0	0	0	0
01/01/14 - 12/31/14	0	0	0	0	0	0	0	0	0
01/01/15 - 12/31/15	0	0	0	0	0	0	0	0	0

STATE ACT - PRIMARY CONVERSION FACTORS (Appendix B-IV, Section A-1)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0.979	0.923	0.994	0.873	0.822	0.994	0.936	1.104	0.956
01/01/12 - 12/31/12	1.022	0.956	1.037	0.911	0.853	1.037	0.970	1.137	0.970
01/01/13 - 12/31/13	1.147	1.028	1.164	1.023	0.917	1.164	1.043	1.179	1.004
01/01/14 - 12/31/14	1.319	1.133	1.340	1.178	1.011	1.340	1.150	1.271	1.036
01/01/15 - 12/31/15	2.083	1.637	2.116	1.859	1.462	2.116	1.663	1.510	1.100

FEDERAL ACT - PRIMARY CONVERSION FACTORS (Appendix B-IV, Section A-1)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0.996	0.938	0.991	0.978	0.922	0.991	0.934	1.104	0.956
01/01/12 - 12/31/12	1.034	0.968	1.031	1.020	0.954	1.031	0.965	1.137	0.970
01/01/13 - 12/31/13	1.157	1.037	1.154	1.144	1.025	1.154	1.034	1.179	1.004
01/01/14 - 12/31/14	1.329	1.140	1.325	1.315	1.129	1.325	1.137	1.271	1.036
01/01/15 - 12/31/15	2.091	1.644	2.085	2.075	1.631	2.085	1.639	1.510	1.100

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APPENDIX B-IV

Derivation of Proposed Rate - Code 6872

EXPECTED EXCESS PROVISION AND REDISTRIBUTION (Appendix B-IV, Section A-2)

After the application of the primary conversion factors, the limited losses are brought to an expected unlimited level through the application of a hazard group-specific excess loss factor. The factor is shown below:

	HAZARD GROUP: G
Excess Factor	1.493

As the excess loss factor is on a combined (indemnity and medical) basis, the following portion of the indemnity expected excess losses are redistributed to medical in order to more accurately allocate expected excess losses:

Redistribution %	40%

STATE ACT - EXPECTED UNLIM LOSSES (Lim Losses x Primary Conv Factors, then adjusted for the Excess Provision and Redistribution)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0	0	0	0	0	0	0	0	133
01/01/12 - 12/31/12	0	0	0	0	0	0	0	0	0
01/01/13 - 12/31/13	0	0	0	0	506,894	0	0	0	330,282
01/01/14 - 12/31/14	0	0	0	0	11,530	0	0	0	44,476
01/01/15 - 12/31/15	0	0	0	0	0	0	0	0	19,030

FEDERAL ACT - EXPECTED UNLIM LOSSES (Lim Losses x Primary Conv Factors, then adjusted for the Excess Provision and Redistribution)

Policy Period	Fatal Likely	Fatal Not-Likely	Permanent Total	Permanent Partial Likely	Permanent Partial Not-Likely	Temporary Total Likely	Temporary Total Not-Likely	Medical Likely	Medical Not-Likely
01/01/11 - 12/31/11	0	0	0	0	0	0	0	0	6,588
01/01/12 - 12/31/12	0	0	0	0	0	0	0	0	0
01/01/13 - 12/31/13	0	0	0	0	0	0	0	0	0
01/01/14 - 12/31/14	0	0	0	0	0	0	0	0	0
01/01/15 - 12/31/15	0	0	0	0	0	0	0	0	0

STATE ACT - SECONDARY CONVERSION FACTORS (Appendix B-IV, Section A-3)

Policy Period	INDUSTRY GROUP: F-Class
01/01/11 - 12/31/11	1.157
01/01/12 - 12/31/12	1.157
01/01/13 - 12/31/13	1.157
01/01/14 - 12/31/14	1.157
01/01/15 - 12/31/15	1.157

FEDERAL ACT - SECONDARY CONVERSION FACTORS (Appendix B-IV, Section A-3)

Policy Period	INDUSTRY GROUP: F-Class
01/01/11 - 12/31/11	1.184
01/01/12 - 12/31/12	1.188
01/01/13 - 12/31/13	1.222
01/01/14 - 12/31/14	1.157
01/01/15 - 12/31/15	1.214

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APPENDIX B-IV

Derivation of Proposed Rate - Code 6872

TOTAL - PAYROLL, FINAL CONVERTED LOSSES

Policy Period	Payroll	Indemnity Likely	Indemnity Not-Likely	Medical Likely	Medical Not-Likely	Total Indemnity	Total Medical	Total
01/01/11 - 12/31/11	256,033	0	0	0	7,954	0	7,954	7,954
01/01/12 - 12/31/12	153,449	0	0	0	0	0	0	0
01/01/13 - 12/31/13	2,095,925	0	586,476	0	382,136	586,476	382,136	968,612
01/01/14 - 12/31/14	2,525,687	0	13,340	0	51,459	13,340	51,459	64,799
01/01/15 - 12/31/15	2,371,350	0	0	0	22,018	0	22,018	22,018
Total	7,402,444	0	599,816	0	463,567	599,816	463,567	1,063,383
		INDICATED PURE PREMIUM				**8.103**	**6.262**	**14.37**

The present on rate level pure premiums are developed by adjusting the pure premiums underlying the current rate by the conversion factors. The derivation of the present on rate level pure premiums for the above-captioned classification follows:

	Indemnity	Medical	Total
Pure Premiums Underlying Current Rate	5.387	5.643	11.03
Conversion Factors (Section B)	0.993	0.993	xxx
PURE PREMIUMS PRESENT ON RATE LEVEL (Underlying Pure Premiums) x (Conversion Factor)	5.349	5.603	10.95

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APPENDIX B-IV

Derivation of Proposed Rate - Code 6872
Industry Group - F-Class, Hazard Group - G

The rate for the above-captioned classification is derived as follows:

		Indemnity	Medical	Total
1.	Indicated Pure Premium	8.103	6.262	14.37
2.	Pure Premium Indicated by National Relativity	3.258	3.713	6.97
3.	Pure Premium Present on Rate Level	5.349	5.603	10.95
4.	State Credibilities	6%	9%	xxx
5.	National Credibilities	28%	30%	xxx
6.	Residual Credibilities = 100% - (4) - (5)	66%	61%	xxx
7.	Derived by Formula Pure Premiums = (1) x (4) + (2) x (5) + (3) x (6)	4.929	5.095	10.02
8.	Test Correction Factor	1.0000	1.0000	xxx
9.	Underlying Pure Premiums = (7) x (8) *	4.925	5.095	10.02
10.	Ratio of Manual to Standard Premium			1.215
11.	Target Cost Ratio			0.748
12.	Rate = (9) x (10) / (11)			16.28
13.	Rate Within Swing Limits			16.28
	Current Rate x Swing Limits a) Lower bound = 16.49 x 0.750 = 12.37 b) Upper bound = 16.49 x 1.250 = 20.61			
14.	Pure Premiums Underlying Proposed Rate* = ((14TOT) / (9TOT)) x (9) ; (14TOT) = (13) x (11) / (10)	4.925	5.095	10.02
15.	Disease, Catastrophe and/or Miscellaneous Loadings			0.00
16.	Final Loaded Rate			16.28

* Indemnity pure premium is adjusted for the rounded total pure premium:
Indemnity Pure Premium = Total Pure Premium - Medical Pure Premium

Iowa

Workers Compensation Rate Filing – January 1, 2019

Appendix C – Memoranda for Laws and Assessments

Appendix C provides details on changes affecting workers compensation benefit costs that are not yet reflected in the on-level factors shown in Appendix A-I. Such changes may result from annual updates in the state average weekly wage, medical reimbursement levels, or other recurring changes that directly affect worker compensation benefit levels. In addition, changes to the administration of the workers compensation system, including benefit levels, may result from specific regulatory, legislative, or judicial action.

The following changes affecting Iowa benefit levels are detailed in this section of the filing:

- Impact of the Change in the Iowa Average Weekly Wage, Effective July 1, 2018
- Longshore and Harbor Workers' Compensation Act
  - Change in the Minimum and Maximum Weekly Benefits, Effective October 1, 2017
  - Annual Assessment

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APPENDIX C-I

Change in the Minimum and Maximum Weekly Benefits, Effective July 1, 2018

In Iowa, maximum and, for certain benefit types, minimum workers compensation indemnity benefit provisions are dependent upon the state average weekly wage (SAWW). The impacts summarized in the table below result from anticipated changes in workers compensation costs due to the change in the SAWW from $860.06 ("current") to $882.26 ("revised"), and apply to injuries occurring on or after July 1, 2018.

The approach used in calculating the effects of a change in the SAWW is as follows:

1. Obtain the latest available SAWW from the Iowa Division of Workers' Compensation.
2. Calculate the minimum and maximum benefits by benefit payment type that are dependent upon and expressed as a percentage of the current and revised SAWW.
3. Using a countrywide distribution of workers and their wages[1], indexed to the Iowa average weekly wage[2], determine expected current and revised average weekly benefits by benefit payment type (and dependency type, as appropriate)[3].
4. Use the above-calculated average weekly benefits to determine the indemnity benefit costs for each injury type (Fatal, Permanent Total, Permanent Partial, and Temporary Total)[4] prior to and subsequent to the change in the SAWW. Calculate the ratio of the revised indemnity benefit costs to current indemnity benefit costs for each injury type to determine the impact by injury type from the change in the SAWW.
5. Determine the indemnity cost distribution by injury type[5].
6. Using the indemnity cost distribution (Step 5) and the effects by injury type (Step 4), calculate the effect of the change in SAWW on total indemnity benefit costs.
7. Multiply the impact on total indemnity benefit costs (Step 6) by the percentage of losses attributed to indemnity benefits[6] to determine the impact of the change in the SAWW on overall benefit costs.

Type of Injury	Percentage of Losses	Effect (%)
Fatal	3.3%	+ 0.1
Permanent Total	1.9%	+ 0.1
Permanent Partial	28.9%	+ 0.1
Temporary Total	8.2%	+ 0.1
Total Indemnity	42.3%	+ 0.1
Medical	57.7%	0.0
Total	100.0%	0.0

1 Based on NCCI Detailed Claim Information data.

2 Forecasted using the Bureau of Labor Statistics Quarterly Census of Employment and Wages, for all private sector employment, and adjusted to reflect injured workers.

3 For states where the rate of compensation is based on spendable wages, state and federal tax withholding tables are used in conjunction with pertinent assumptions (e.g., number of dependents).

4 Various distributions based on internal and external data are employed in determining the impact by type of injury. For example, for Fatal injuries, a countrywide distribution of average ages and dependents by type (e.g., spouse, spouse with one child, parent, etc.) is used in calculating mortality-adjusted annuity values under both the current and revised weekly maximum benefits, with the likelihood of remarriage incorporated as applicable.

5 NCCI Unit Statistical Plan data for the 24-month policy period ending 02/28/2015 on the 01/01/2018 law level and developed to an ultimate basis by type of injury.

6 NCCI Financial Call data for Iowa for Policy Years 2015 and 2016 projected to 07/01/2018.

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APPENDIX C-II

Longshore and Harbor Workers' Compensation Act

Change in the Minimum and Maximum Weekly Benefits, Effective October 1, 2017

In the Longshore And Harbor Workers' Compensation Act , maximum and, for certain benefit types, minimum workers compensation indemnity benefit provisions are dependent upon the national average weekly wage (NAWW). The impacts summarized in the table below result from anticipated changes in workers compensation costs due to the change in the NAWW from $718.24 ("current") to $735.89 ("revised"), and apply to injuries occurring on or after October 1, 2017.

The approach used in calculating the effects of a change in the NAWW is as follows:

1. Obtain the latest available NAWW from the United States Department of Labor, Division of Longshore and Harbor Workers' Compensation (DLHWC).
2. Calculate the minimum and maximum benefits by benefit payment type that are dependent upon and expressed as a percentage of the current and revised NAWW.
3. Using a countrywide distribution of workers and their wages[1], indexed to the Longshore And Harbor Workers' Compensation Act average weekly wage[2], determine expected current and revised average weekly benefits by benefit payment type (and dependency type, as appropriate)[3].
4. Use the above-calculated average weekly benefits to determine the indemnity benefit costs for each injury type (Fatal, Permanent Total, Permanent Partial, and Temporary Total)[4] prior to and subsequent to the change in the NAWW. Calculate the ratio of the revised indemnity benefit costs to current indemnity benefit costs for each injury type to determine the impact by injury type from the change in the NAWW.
5. Determine the indemnity cost distribution by injury type[5].
6. Using the indemnity cost distribution (Step 5) and the effects by injury type (Step 4), calculate the effect of the change in NAWW on total indemnity benefit costs.
7. Multiply the impact on total indemnity benefit costs (Step 6) by the percentage of losses attributed to indemnity benefits to determine the impact of the change in the NAWW on overall benefit costs.

Type of Injury	Percentage of Losses	Effect (%)
Fatal	2.2%	+ 0.5
Permanent Total	5.9%	+ 0.4
Permanent Partial	41.9%	+ 0.2
Temporary Total	7.6%	+ 0.4
Total Indemnity	57.6%	+ 0.3
Medical	42.4%	0.0
Total	100.0%	+ 0.2

[1] Based on NCCI Detailed Claim Information data.

[2] Bureau of Labor Statistics Quarterly Census of Employment and Wages, for all private sector employment, and adjusted to reflect injured workers.

[3] For states where the rate of compensation is based on spendable wages, state and federal tax withholding tables are used in conjunction with pertinent assumptions (e.g., number of dependents).

[4] Various distributions based on internal and external data are employed in determining the impact by type of injury. For example, for Fatal injuries, a countrywide distribution of average ages and dependents by type (e.g., spouse, spouse with one child, parent, etc.) is used in calculating mortality-adjusted annuity values under both the current and revised weekly maximum benefits, with the likelihood of remarriage incorporated as applicable.

[5] NCCI Unit Statistical Plan data for the 36-month policy period ending 12/31/2014 on the 10/01/2016 law level and developed to an ultimate basis by type of injury.

IOWA

APPENDIX C-III

U.S. Longshore and Harbor Workers' Compensation Act Assessment

The F-class and Program II, Option II maritime class voluntary rates and assigned risk rates include the following provision for the federal assessment:

1.)	Estimated Total Expense Needed for 2017 *	114,000,000
2.)	Compensation Payments Reported (on indemnity only) in 2016 *	959,394,551
3.)	Assessment Rate on Indemnity Losses (1) / (2)	11.9%

Breakdown of Losses Under the Longshore and Harbor Workers Act

4.)	Indemnity Losses (Combination of 1st through 3rd reports) #	44,796,736
5.)	Medical Losses (Combination of 1st through 3rd reports) #	30,153,455
6.)	Total Losses (4) + (5)	74,950,191
7.)	Assessment Rate on Total Losses { (3) x (4) } / (6)	7.1%

* Source: U.S. Department of Labor

\# Source: On-leveled and developed USL&HW losses - statistical plan data

Iowa

Workers Compensation Rate Filing – January 1, 2019

Appendix D – Internal Rate of Return Analysis

Appendix D provides details of the calculation of the profit and contingency provision in the Internal Rate of Return (IRR) Model.

NATIONAL COUNCIL ON COMPENSATION INSURANCE
INTERNAL RATE OF RETURN ANALYSIS
IOWA - VOLUNTARY

Overview

According to actuarial principles, insurance rates must be determined such that insurers can be expected to earn an appropriate rate of return. Analysis and determination of a profit and contingency (P&C) provision is necessary to ensure this objective is achieved. To determine the profit and contingency provision, NCCI first uses market-based financial methods to estimate the rate of return (also known as the cost of capital) required by investors of securities with a similar risk profile to workers compensation insurance. NCCI then performs an Internal Rate of Return (IRR) analysis to estimate the profit and contingency provision that needs to be included in the proposed rates for insurers to earn the cost of capital, after accounting for investment income.

The IRR model is based on the principle that the internal rate of return from an investment opportunity equals the investor's cost of capital if the sum of all cash flows from that investment, discounted at the cost of capital, equals zero. In the case of workers compensation insurance, cash flows to the capital providers are comprised of insurance cash flows, investment income, and commitment and release of capital in support of the insurance transaction.

- Insurance cash flows consist of premiums earned less payments for expenses, losses, loss adjustment expenses (LAE), and federal income taxes. These cash flows are estimated based on the provisions included in this proposed rate filing.
- Investment income on reserves and surplus depends on an after-tax return on investment (RoI), which is estimated using a combination of current financial market data and forecasts.
- The cost of capital used is a weighted average cost of capital (WACC), which takes into account both debt and equity components of a representative insurer's capital structure.

IRR Model Inputs and Results

The model estimates the P&C provision necessary in order for the proposed rates to cover the cost of capital. The P&C provision is estimated using two different assumptions regarding the return on investment and cost of capital:

- The "Static" estimate of the P&C provision assumes that the return on investment and the WACC do not change over time, but remain static at their indicated market values at the time the model was run.
- The "Dynamic" estimate assumes that the return on investment and WACC vary over time. The investment portfolio is assumed to be reinvested at future forecasted yields as securities mature, and WACC varies to reflect future expected costs of equity and debt. The starting point for the Dynamic estimates is January 1, 2019.

The following table summarizes the inputs and results of the model under these two scenarios.

TABLE 1: IRR MODEL INPUTS AND RESULTS

Inputs:			
(1)	Expenses and Taxes as a Percentage of Net Premium at NCCI Level		19.80%
(2)	Reserve-to-Surplus Ratio		1.83
(3)	Cash Flow Patterns		See Table 2
		Static	Dynamic*
(4)	Return on Investments	3.20%	4.14% - 4.62%
(5)	Weighted Average Cost of Capital	8.08%	9.07% - 9.64%
Results			
		Static	Dynamic
(6)	**Indicated Profit and Contingency Provision**	**0.09%**	**-2.41%**
(7)	Loss and Loss Adjustment Expense Provision [100% - (6) - (1)]	80.11%	82.61%

Table Notes:
It is assumed that no policyholders dividends are paid and that there are no rate departures (deviations or schedule rating).
(1) Expense provisions and taxes derived from the filing.
(2) Calculated from Best's 2017 Aggregates & Averages, for Commercial Casualty Composite, as the weighted average of Loss, LAE, and Unearned Premium Reserves to Policyholder Surplus, for years 2012 - 2016.
* See Table 3 for details by time period.

NATIONAL COUNCIL ON COMPENSATION INSURANCE
INTERNAL RATE OF RETURN ANALYSIS
IOWA - VOLUNTARY

TABLE 2: CASH FLOW PATTERNS (CUMULATIVE)

Time	(1) Policy-Year Collected Premium	(2) Earned Premium	(3) Written Premium	(4) Expenses and Taxes	(5) Paid Losses and LAE
0.00	-	-	-	-	-
0.25	12.22%	3.51%	28.10%	12.46%	0.79%
0.50	28.83%	13.65%	53.00%	28.74%	3.08%
0.75	51.45%	30.04%	78.10%	50.46%	6.78%
1.00	75.10%	52.30%	100.00%	72.95%	11.80%
1.25	88.76%	73.79%		85.30%	20.28%
1.50	96.80%	88.65%		92.57%	28.75%
1.75	100.00%	97.26%		100.00%	37.23%
2.00		100.00%			45.70%
2.25					50.13%
2.50					54.55%
2.75					58.98%
3.00					63.40%
3.25					66.03%
3.50					68.65%
3.75					71.28%
4.00					73.90%
4.25					75.28%
4.50					76.65%
4.75					78.03%
5.00					79.40%
6.00					82.40%
7.00					84.50%
8.00					86.00%
9.00					87.90%
10.00					88.90%
11.00					89.50%
12.00					90.50%
13.00					90.90%
14.00					91.30%
15.00					91.70%
16.00					92.20%
17.00					92.50%
18.00					93.00%
19.00					93.10%
20.00					93.30%
21.00					93.50%
22.00					93.70%
23.00					94.10%
24.00					94.50%
25.00					94.80%
26.00					95.00%
27.00					95.20%
28.00					95.40%
29.00					95.60%
30.00					95.90%
31.00					96.81%
32.00					97.67%
33.00					98.49%
34.00					99.26%
35.00					100.00%

TABLE 3: DYNAMIC ESTIMATE INPUTS

Time	(1) Return on Investments	(2) Weighted Average Cost of Capital
0.00	-	-
0.25	4.14%	9.07%
0.50	4.17%	9.23%
0.75	4.26%	9.39%
1.00	4.27%	9.42%
1.25	4.27%	9.35%
1.50	4.25%	9.25%
1.75	4.23%	9.20%
2.00	4.23%	9.21%
2.25	4.23%	9.26%
2.50	4.23%	9.31%
2.75	4.30%	9.34%
3.00	4.30%	9.40%
3.25	4.27%	9.43%
3.50	4.27%	9.44%
3.75	4.24%	9.41%
4.00	4.24%	9.40%
4.25	4.24%	9.41%
4.50	4.24%	9.41%
4.75	4.25%	9.41%
5.00	4.25%	9.40%
6.00	4.28%	9.48%
7.00	4.33%	9.65%
8.00	4.54%	9.85%
9.00	4.69%	9.88%
10.00	4.66%	9.80%
11.00	4.58%	9.73%
12.00	4.57%	9.68%
13.00	4.56%	9.66%
14.00	4.55%	9.64%
15.00	4.56%	9.63%
16.00	4.56%	9.62%
17.00	4.57%	9.61%
18.00	4.57%	9.61%
19.00	4.57%	9.61%
20.00	4.58%	9.62%
21.00	4.61%	9.63%
22.00	4.62%	9.64%
23.00	4.62%	9.64%
24.00	4.62%	9.64%
25.00	4.62%	9.64%
26.00	4.62%	9.64%
27.00	4.62%	9.64%
28.00	4.62%	9.64%
29.00	4.62%	9.64%
30.00	4.62%	9.64%
31.00	4.62%	9.64%
32.00	4.62%	9.64%
33.00	4.62%	9.64%
34.00	4.62%	9.64%
35.00	4.62%	9.64%

Table 2 Notes:

Table 2 shows cumulative cash flows. For ease of reading no additional numbers are shown after a column reaches 100% cumulative cash flow.

(1) Derived from estimates of premium distribution and payment terms by size of policy.

(2) Based on written premium pattern assuming uniform writings within quarters and standard quarterly earning pattern.

(3) Based on this jurisdiction's premium writings by quarter.

(4) Expenses assumed paid as premium is collected; timing of taxes based on NCCI's Tax and Assessment Directory.

(5) Derived from loss development data underlying this rate filing. Payouts for the first 30 years are based upon the ratio of paid losses to incurred losses from the most recent 30 policy years for which data is available. For the following years, loss payouts are assumed to trail off geometrically, with an adjustment so that the payout will be complete at 35 years.

Calculation Details

The tables in the following pages show the detailed calculations of the IRR model.

List of Tables

Note: Although values are displayed to 4 decimal places in the following tables, the calculations themselves are carried to the full precision of the computer.

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INTERNAL RATE OF RETURN ANALYSIS
IOWA - VOLUNTARY

Calculation Details - Static Estimate

TABLE 4: DERIVATION OF INSURANCE CASH FLOW (STATIC ESTIMATE)

Time	(1) Collected Premium Factor	(2) Expense and Taxes Factor	(3) Paid Losses and LAE Factor	(4) Federal Income Tax Factor	(5) Insurance Cash flow Factor
0.00	-	-	-	-	-
0.25	0.1222	0.0247	0.0063	0.0056	0.0855
0.50	0.2883	0.0569	0.0247	0.0112	0.1955
0.75	0.5145	0.0999	0.0543	0.0168	0.3435
1.00	0.7510	0.1444	0.0945	0.0224	0.4897
1.25	0.8876	0.1689	0.1624	0.0194	0.5369
1.50	0.9680	0.1833	0.2303	0.0165	0.5380
1.75	1.0000	0.1980	0.2982	0.0135	0.4903
2.00	1.0000	0.1980	0.3661	0.0106	0.4253
2.25	1.0000	0.1980	0.4015	0.0099	0.3905
2.50	1.0000	0.1980	0.4370	0.0093	0.3557
2.75	1.0000	0.1980	0.4724	0.0086	0.3209
3.00	1.0000	0.1980	0.5079	0.0080	0.2861
3.25	1.0000	0.1980	0.5289	0.0075	0.2656
3.50	1.0000	0.1980	0.5500	0.0071	0.2450
3.75	1.0000	0.1980	0.5710	0.0067	0.2244
4.00	1.0000	0.1980	0.5920	0.0062	0.2038
4.25	1.0000	0.1980	0.6030	0.0060	0.1930
4.50	1.0000	0.1980	0.6140	0.0058	0.1822
4.75	1.0000	0.1980	0.6251	0.0055	0.1714
5.00	1.0000	0.1980	0.6361	0.0053	0.1606
6.00	1.0000	0.1980	0.6601	0.0047	0.1372
7.00	1.0000	0.1980	0.6769	0.0042	0.1209
8.00	1.0000	0.1980	0.6889	0.0037	0.1094
9.00	1.0000	0.1980	0.7042	0.0031	0.0948
10.00	1.0000	0.1980	0.7122	0.0026	0.0872
11.00	1.0000	0.1980	0.7170	0.0022	0.0828
12.00	1.0000	0.1980	0.7250	0.0019	0.0752
13.00	1.0000	0.1980	0.7282	0.0016	0.0722
14.00	1.0000	0.1980	0.7314	0.0014	0.0692
15.00	1.0000	0.1980	0.7346	0.0012	0.0662
16.00	1.0000	0.1980	0.7386	0.0009	0.0624
17.00	1.0000	0.1980	0.7410	0.0008	0.0602
18.00	1.0000	0.1980	0.7450	0.0006	0.0564
19.00	1.0000	0.1980	0.7458	0.0004	0.0557
20.00	1.0000	0.1980	0.7474	0.0003	0.0542
21.00	1.0000	0.1980	0.7490	0.0003	0.0526
22.00	1.0000	0.1980	0.7506	0.0003	0.0510
23.00	1.0000	0.1980	0.7538	0.0003	0.0479
24.00	1.0000	0.1980	0.7570	0.0003	0.0447
25.00	1.0000	0.1980	0.7594	0.0003	0.0423
26.00	1.0000	0.1980	0.7610	0.0003	0.0407
27.00	1.0000	0.1980	0.7626	0.0003	0.0391
28.00	1.0000	0.1980	0.7642	0.0003	0.0375
29.00	1.0000	0.1980	0.7658	0.0003	0.0359
30.00	1.0000	0.1980	0.7682	0.0003	0.0335
31.00	1.0000	0.1980	0.7755	0.0003	0.0262
32.00	1.0000	0.1980	0.7824	0.0002	0.0193
33.00	1.0000	0.1980	0.7890	0.0002	0.0128
34.00	1.0000	0.1980	0.7952	0.0002	0.0066
35.00	1.0000	0.1980	0.8011	0.0002	0.0007

Column Notes:
(1) is Collected Premium by time period, expressed as a factor, = Table 2 col (1)
(2) is Expenses and Taxes by time period, expressed as a factor, = Table 1 row (1) x Table 2 col (4)
(3) is Paid Losses and LAE by time period, expressed as a factor, = Table 1 row (7, Static) x Table 2 col (5)
(4) per the Tax Cuts and Jobs Act of 2017, federal income taxes are computed as the tax rate (21%) times the adjusted underwriting income calculated per IRS rules. See Appendix B for details.
(5) is the Total Insurance Cash Flow by time period, expressed as a factor, = (1) - [(2) + (3) + (4)]

Calculation Details - Static Estimate (continued)

TABLE 5: DERIVATION OF CASH FLOWS TO THE CAPITAL PROVIDERS (STATIC ESTIMATE)

Time	(1) Unearned Premium, Unpaid Loss and Unpaid LAE Reserve Factor	(2) Factor for Surplus Allocated to Reserves	(3) Total Invested Funds Factor	(4) Income from Invested Funds Factor	(5) Capital Provider Equity Factor	(6) Capital Provider Cash Flow Factor	(7) Discounted Capital Provider Cash Flow Factor
0.00	-	-	-	-	-	-	-
0.25	0.2677	0.1463	0.2551	0.0010	(0.1685)	(0.1685)	(0.1669)
0.50	0.4782	0.2613	0.4977	0.0040	(0.2983)	(0.1297)	(0.1260)
0.75	0.6670	0.3645	0.7649	0.0090	(0.4124)	(0.1142)	(0.1088)
1.00	0.8014	0.4379	0.9904	0.0159	(0.4848)	(0.0724)	(0.0676)
1.25	0.6908	0.3775	0.9559	0.0236	(0.3954)	0.0894	0.0819
1.50	0.5934	0.3242	0.8856	0.0309	(0.3168)	0.0786	0.0707
1.75	0.5083	0.2778	0.7861	0.0375	(0.2584)	0.0584	0.0515
2.00	0.4350	0.2377	0.6727	0.0432	(0.2041)	0.0542	0.0469
2.25	0.3995	0.2183	0.6179	0.0483	(0.1790)	0.0251	0.0213
2.50	0.3641	0.1990	0.5631	0.0530	(0.1543)	0.0247	0.0205
2.75	0.3286	0.1796	0.5082	0.0572	(0.1301)	0.0243	0.0198
3.00	0.2932	0.1602	0.4534	0.0610	(0.1063)	0.0238	0.0191
3.25	0.2722	0.1487	0.4209	0.0644	(0.0909)	0.0154	0.0121
3.50	0.2511	0.1372	0.3884	0.0676	(0.0758)	0.0151	0.0116
3.75	0.2301	0.1257	0.3559	0.0706	(0.0609)	0.0149	0.0112
4.00	0.2091	0.1143	0.3233	0.0733	(0.0463)	0.0146	0.0108
4.25	0.1981	0.1082	0.3063	0.0758	(0.0376)	0.0087	0.0063
4.50	0.1871	0.1022	0.2893	0.0781	(0.0290)	0.0086	0.0061
4.75	0.1760	0.0962	0.2722	0.0803	(0.0205)	0.0085	0.0059
5.00	0.1650	0.0902	0.2552	0.0824	(0.0122)	0.0083	0.0057
6.00	0.1410	0.0770	0.2180	0.0900	0.0091	0.0213	0.0139
7.00	0.1242	0.0679	0.1920	0.0965	0.0254	0.0163	0.0098
8.00	0.1122	0.0613	0.1734	0.1024	0.0383	0.0129	0.0072
9.00	0.0969	0.0530	0.1499	0.1075	0.0524	0.0141	0.0073
10.00	0.0889	0.0486	0.1375	0.1121	0.0618	0.0094	0.0045
11.00	0.0841	0.0460	0.1301	0.1164	0.0691	0.0073	0.0032
12.00	0.0761	0.0416	0.1177	0.1204	0.0778	0.0087	0.0036
13.00	0.0729	0.0398	0.1127	0.1240	0.0835	0.0057	0.0022
14.00	0.0697	0.0381	0.1078	0.1276	0.0890	0.0055	0.0019
15.00	0.0665	0.0363	0.1028	0.1309	0.0943	0.0053	0.0017
16.00	0.0625	0.0341	0.0966	0.1341	0.0999	0.0056	0.0017
17.00	0.0601	0.0328	0.0929	0.1371	0.1045	0.0045	0.0013
18.00	0.0561	0.0306	0.0867	0.1400	0.1097	0.0052	0.0013
19.00	0.0553	0.0302	0.0855	0.1428	0.1130	0.0033	0.0008
20.00	0.0537	0.0293	0.0830	0.1455	0.1167	0.0037	0.0008
21.00	0.0521	0.0285	0.0805	0.1481	0.1202	0.0035	0.0007
22.00	0.0505	0.0276	0.0780	0.1506	0.1236	0.0034	0.0006
23.00	0.0473	0.0258	0.0731	0.1530	0.1278	0.0042	0.0007
24.00	0.0441	0.0241	0.0681	0.1553	0.1318	0.0040	0.0006
25.00	0.0417	0.0228	0.0644	0.1574	0.1352	0.0034	0.0005
26.00	0.0401	0.0219	0.0619	0.1594	0.1381	0.0029	0.0004
27.00	0.0385	0.0210	0.0595	0.1614	0.1410	0.0028	0.0004
28.00	0.0369	0.0201	0.0570	0.1632	0.1437	0.0027	0.0003
29.00	0.0352	0.0193	0.0545	0.1650	0.1464	0.0027	0.0003
30.00	0.0328	0.0179	0.0508	0.1667	0.1494	0.0030	0.0003
31.00	0.0256	0.0140	0.0395	0.1681	0.1548	0.0054	0.0005
32.00	0.0187	0.0102	0.0289	0.1692	0.1597	0.0049	0.0004
33.00	0.0121	0.0066	0.0187	0.1700	0.1640	0.0044	0.0003
34.00	0.0059	0.0032	0.0091	0.1704	0.1679	0.0039	0.0003
35.00	-	-	-	0.1706	0.1713	0.0034	0.0002

Column Notes:

(1) is Unearned Premium Reserve (equal to Written Premium minus Earned Premium, per the cashflow pattern) plus Unpaid Loss and LAE Reserve (equal to Incurred minus Paid Losses and LAE) by time period, expressed as a factor,
= [Table 2 col (3) - Table 2 col (2)] + Table 1 row (7, Static) x [Table 2 col (2) - Table 2 col (5)]

(2) is the Surplus derived from Reserves per the Reserve-to-Surplus Ratio by time period, expressed as a factor, = (1) / Table 1 row (2)

(3) is Reserves plus Surplus minus Agent Balances by time period, expressed as a factor, = (1) + (2) - Agent Balances. Agent Balances exist when Written Premium exceeds Collected Premium, = [Table 2 col (3) - Table 2 col (1)].

(4) is derived by applying the Return on Investments [Table 1 row (4, Static)] to the average Invested Funds (4) from the previous and current time periods, plus previous Income from Invested Funds, by time period expressed as a factor.

(5) is Insurance Cash Flow plus Income from Invested Funds minus Total Invested Funds by time period, expressed as a factor,
= Table 4 col (5) + (4) - (3)

(6) is the difference between Capital Provider Equity (5) at the current and previous time periods, expressed as a factor

(7) is the Capital Provider Cash Flow (6) discounted by the Weighted Average Cost of Capital [Table 1 row (5, Static)], expressed as a factor

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IOWA - VOLUNTARY

Calculation Details - Dynamic Estimate

TABLE 6: DERIVATION OF INSURANCE CASH FLOW (DYNAMIC ESTIMATE)

Time	(1) Collected Premium Factor	(2) Expense and Taxes Factor	(3) Paid Losses and LAE Factor	(4) Federal Income Tax Factor	(5) Insurance Cash flow Factor
0.00	-	-	-	-	-
0.25	0.1222	0.0247	0.0065	0.0050	0.0859
0.50	0.2883	0.0569	0.0254	0.0100	0.1959
0.75	0.5145	0.0999	0.0560	0.0150	0.3436
1.00	0.7510	0.1444	0.0975	0.0200	0.4892
1.25	0.8876	0.1689	0.1675	0.0164	0.5349
1.50	0.9680	0.1833	0.2375	0.0128	0.5345
1.75	1.0000	0.1980	0.3075	0.0092	0.4853
2.00	1.0000	0.1980	0.3775	0.0056	0.4188
2.25	1.0000	0.1980	0.4141	0.0050	0.3829
2.50	1.0000	0.1980	0.4506	0.0043	0.3471
2.75	1.0000	0.1980	0.4872	0.0036	0.3112
3.00	1.0000	0.1980	0.5238	0.0029	0.2753
3.25	1.0000	0.1980	0.5454	0.0025	0.2541
3.50	1.0000	0.1980	0.5671	0.0020	0.2328
3.75	1.0000	0.1980	0.5888	0.0016	0.2116
4.00	1.0000	0.1980	0.6105	0.0012	0.1903
4.25	1.0000	0.1980	0.6219	0.0009	0.1792
4.50	1.0000	0.1980	0.6332	0.0007	0.1681
4.75	1.0000	0.1980	0.6446	0.0004	0.1570
5.00	1.0000	0.1980	0.6559	0.0002	0.1459
6.00	1.0000	0.1980	0.6807	(0.0004)	0.1217
7.00	1.0000	0.1980	0.6981	(0.0010)	0.1049
8.00	1.0000	0.1980	0.7105	(0.0015)	0.0930
9.00	1.0000	0.1980	0.7262	(0.0021)	0.0780
10.00	1.0000	0.1980	0.7344	(0.0026)	0.0702
11.00	1.0000	0.1980	0.7394	(0.0030)	0.0656
12.00	1.0000	0.1980	0.7476	(0.0033)	0.0577
13.00	1.0000	0.1980	0.7509	(0.0036)	0.0547
14.00	1.0000	0.1980	0.7542	(0.0038)	0.0516
15.00	1.0000	0.1980	0.7576	(0.0041)	0.0485
16.00	1.0000	0.1980	0.7617	(0.0043)	0.0446
17.00	1.0000	0.1980	0.7642	(0.0045)	0.0423
18.00	1.0000	0.1980	0.7683	(0.0047)	0.0384
19.00	1.0000	0.1980	0.7691	(0.0048)	0.0377
20.00	1.0000	0.1980	0.7708	(0.0049)	0.0361
21.00	1.0000	0.1980	0.7724	(0.0049)	0.0345
22.00	1.0000	0.1980	0.7741	(0.0049)	0.0328
23.00	1.0000	0.1980	0.7774	(0.0049)	0.0296
24.00	1.0000	0.1980	0.7807	(0.0049)	0.0263
25.00	1.0000	0.1980	0.7832	(0.0049)	0.0238
26.00	1.0000	0.1980	0.7848	(0.0050)	0.0221
27.00	1.0000	0.1980	0.7865	(0.0050)	0.0205
28.00	1.0000	0.1980	0.7881	(0.0050)	0.0188
29.00	1.0000	0.1980	0.7898	(0.0050)	0.0172
30.00	1.0000	0.1980	0.7923	(0.0050)	0.0147
31.00	1.0000	0.1980	0.7998	(0.0050)	0.0072
32.00	1.0000	0.1980	0.8069	(0.0050)	0.0001
33.00	1.0000	0.1980	0.8136	(0.0050)	(0.0066)
34.00	1.0000	0.1980	0.8200	(0.0050)	(0.0130)
35.00	1.0000	0.1980	0.8261	(0.0051)	(0.0191)

Column Notes:
(1) is Collected Premium by time period, expressed as a factor, = Table 2 col (1)
(2) is Expenses and Taxes by time period, expressed as a factor, = Table 1 row (1) x Table 2 col (4)
(3) is Paid Losses and LAE by time period, expressed as a factor, = Table 1 row (7, Dynamic) x Table 2 col (5)
(4) per the Tax Cuts and Jobs Act of 2017, federal income taxes are computed as the tax rate (21%) times the adjusted underwriting income calculated per IRS rules. See Appendix B for details.
(5) is the Total Insurance Cash Flow by time period, expressed as a factor, = (1) - [(2) + (3) + (4)]

Calculation Details - Dynamic Estimate (continued)

TABLE 7: DERIVATION OF CASH FLOWS TO THE CAPITAL PROVIDERS (DYNAMIC ESTIMATE)

Time	(1) Unearned Premium, Unpaid Loss and Unpaid LAE Reserve Factor	(2) Factor for Surplus Allocated to Reserves	(3) Total Invested Funds Factor	(4) Income from Invested Funds Factor	(5) Capital Provider Equity Factor	(6) Capital Provider Cash Flow Factor	(7) Cumulative Discount Factor	(8) Discounted Capital Provider Cash Flow Factor
0.00	-	-	-	-	-	-	-	-
0.25	0.2683	0.1466	0.2561	0.0013	(0.1689)	(0.1689)	0.9892	(0.1671)
0.50	0.4808	0.2627	0.5018	0.0052	(0.3007)	(0.1318)	0.9676	(0.1275)
0.75	0.6728	0.3676	0.7739	0.0119	(0.4184)	(0.1177)	0.9462	(0.1114)
1.00	0.8116	0.4435	1.0061	0.0212	(0.4957)	(0.0773)	0.9251	(0.0715)
1.25	0.7042	0.3848	0.9766	0.0317	(0.4101)	0.0856	0.9047	0.0774
1.50	0.6083	0.3324	0.9088	0.0415	(0.3328)	0.0773	0.8849	0.0684
1.75	0.5234	0.2860	0.8093	0.0505	(0.2736)	0.0592	0.8656	0.0513
2.00	0.4486	0.2451	0.6937	0.0583	(0.2166)	0.0570	0.8468	0.0483
2.25	0.4120	0.2252	0.6372	0.0652	(0.1890)	0.0276	0.8282	0.0228
2.50	0.3755	0.2052	0.5806	0.0716	(0.1620)	0.0270	0.8100	0.0219
2.75	0.3389	0.1852	0.5241	0.0774	(0.1355)	0.0265	0.7921	0.0210
3.00	0.3024	0.1652	0.4676	0.0827	(0.1096)	0.0259	0.7745	0.0201
3.25	0.2807	0.1534	0.4340	0.0874	(0.0926)	0.0170	0.7573	0.0129
3.50	0.2590	0.1415	0.4005	0.0918	(0.0759)	0.0167	0.7404	0.0123
3.75	0.2373	0.1297	0.3670	0.0958	(0.0596)	0.0163	0.7239	0.0118
4.00	0.2156	0.1178	0.3334	0.0994	(0.0437)	0.0160	0.7078	0.0113
4.25	0.2043	0.1116	0.3159	0.1028	(0.0338)	0.0098	0.6921	0.0068
4.50	0.1929	0.1054	0.2983	0.1060	(0.0242)	0.0097	0.6767	0.0065
4.75	0.1815	0.0992	0.2807	0.1091	(0.0147)	0.0095	0.6617	0.0063
5.00	0.1702	0.0930	0.2632	0.1119	(0.0054)	0.0093	0.6470	0.0060
6.00	0.1454	0.0795	0.2248	0.1224	0.0192	0.0246	0.6114	0.0150
7.00	0.1280	0.0700	0.1980	0.1315	0.0384	0.0192	0.5576	0.0107
8.00	0.1157	0.0632	0.1789	0.1401	0.0542	0.0159	0.5076	0.0080
9.00	0.1000	0.0546	0.1546	0.1479	0.0713	0.0170	0.4620	0.0079
10.00	0.0917	0.0501	0.1418	0.1548	0.0832	0.0119	0.4207	0.0050
11.00	0.0867	0.0474	0.1341	0.1611	0.0926	0.0094	0.3834	0.0036
12.00	0.0785	0.0429	0.1214	0.1670	0.1033	0.0107	0.3496	0.0038
13.00	0.0752	0.0411	0.1163	0.1724	0.1108	0.0075	0.3188	0.0024
14.00	0.0719	0.0393	0.1111	0.1776	0.1180	0.0072	0.2908	0.0021
15.00	0.0686	0.0375	0.1060	0.1825	0.1250	0.0070	0.2652	0.0019
16.00	0.0644	0.0352	0.0996	0.1872	0.1322	0.0072	0.2420	0.0017
17.00	0.0620	0.0339	0.0958	0.1917	0.1382	0.0060	0.2207	0.0013
18.00	0.0578	0.0316	0.0894	0.1959	0.1448	0.0067	0.2014	0.0013
19.00	0.0570	0.0311	0.0882	0.2000	0.1495	0.0047	0.1837	0.0009
20.00	0.0554	0.0302	0.0856	0.2039	0.1545	0.0050	0.1676	0.0008
21.00	0.0537	0.0293	0.0830	0.2078	0.1593	0.0048	0.1529	0.0007
22.00	0.0520	0.0284	0.0805	0.2116	0.1640	0.0047	0.1395	0.0007
23.00	0.0487	0.0266	0.0754	0.2152	0.1694	0.0054	0.1272	0.0007
24.00	0.0454	0.0248	0.0703	0.2186	0.1746	0.0052	0.1160	0.0006
25.00	0.0430	0.0235	0.0664	0.2217	0.1791	0.0045	0.1058	0.0005
26.00	0.0413	0.0226	0.0639	0.2247	0.1830	0.0039	0.0965	0.0004
27.00	0.0397	0.0217	0.0613	0.2276	0.1868	0.0038	0.0880	0.0003
28.00	0.0380	0.0208	0.0588	0.2304	0.1905	0.0037	0.0803	0.0003
29.00	0.0363	0.0199	0.0562	0.2331	0.1940	0.0036	0.0732	0.0003
30.00	0.0339	0.0185	0.0524	0.2356	0.1979	0.0039	0.0668	0.0003
31.00	0.0264	0.0144	0.0408	0.2377	0.2042	0.0063	0.0609	0.0004
32.00	0.0192	0.0105	0.0298	0.2394	0.2097	0.0055	0.0556	0.0003
33.00	0.0125	0.0068	0.0193	0.2405	0.2146	0.0048	0.0507	0.0002
34.00	0.0061	0.0033	0.0094	0.2411	0.2188	0.0042	0.0462	0.0002
35.00	-	-	-	0.2414	0.2223	0.0036	0.0422	0.0002

Column Notes:

(1) is Unearned Premium Reserve (equal to Written Premium minus Earned Premium, per the cashflow pattern) plus Unpaid Loss and LAE Reserve (equal to Incurred minus Paid Losses and LAE) by time period, expressed as a factor,
= [Table 2 col (3) - Table 2 col (2)] + Table 1 row (7, Dynamic) x [Table 2 col (2) - Table 2 col (5)]

(2) is the Surplus derived from Reserves per the Reserve-to-Surplus Ratio by time period, expressed as a factor, = (1) / Table 1 row (2)

(3) is Reserves plus Surplus minus Agent Balances by time period, expressed as a factor, = (1) + (2) - Agent Balances. Agent Balances exist when Written Premium exceeds Collected Premium, = [Table 2 col (3) - Table 2 col (1)].

(4) is derived by applying the Return on Investments [Table 3 col (1)] to the average Invested Funds (4) from the previous and current time periods, plus previous Income from Invested Funds, by time period expressed as a factor.

(5) is Insurance Cash Flow plus Income from Invested Funds minus Total Invested Funds by time period, expressed as a factor,
= Table 6 col (5) + (4) - (3)

(6) is the difference between Capital Provider Equity (5) at the current and previous time periods, expressed as a factor

(7) is derived from the respective Weighted Average Cost of Capital [Table 3 col (2)] for each time period, expressed as a factor

(8) is the Capital Provider Cash Flow (6) discounted by the Cumulative Discount Factor (7), expressed as a factor

APPENDIX A: CALCULATION OF WEIGHTED AVERAGE COST OF CAPITAL AND RETURN ON INVESTMENTS

The calculation of the Weighted Average Cost of Capital (WACC) is shown in Table A.1, and the calculation of the Return on Investments (RoI) is shown in Table A.2. The calculation for the Static estimate is shown in each. Calculations of the WACC and RoI under the Dynamic estimate for time periods 1, 2, and 5 are also provided for illustrative purposes. Note that the IRR model under the Dynamic estimate includes estimates of the WACC and RoI on a quarterly basis for the first five years and annually thereafter.

TABLE A.1: CALCULATION OF WEIGHTED AVERAGE COST OF CAPITAL

		IRR Model Time (yrs)		
	Static	**1.00**	**2.00**	**5.00**
(1) 5 year US T-note Yield	2.53%	3.92%	3.71%	3.90%
(2) US Equity Market Risk Premium	7.65%			
(3) Beta for Property/Casualty (P/C) Insurers	0.86			
(4) Equity Cost of Capital for P/C Insurers	9.11%	10.50%	10.29%	10.48%
(5) Share of Equity Capital for P/C Insurers	83%			
(6) Debt Cost of Capital for P/C Insurers	3.03%	4.13%	3.96%	4.11%
(7) Weighted Average Cost of Capital (WACC)	8.08%	9.42%	9.21%	9.40%

Column Notes:

(1) Forward estimates of the 5-year US T-note yield are from Moody's forecasts and apply only to the Dynamic estimate of the WACC. Time periods provided are illustrative; the full model includes estimates on a quarterly basis for the first five years and annually thereafter.

(3) & (5) P/C beta and share of equity capital are estimated from historical data for a collection of insurers with publicly traded equity and debt.

(4) = (1) + (2) x (3)

(6) P/C debt cost of capital is the sum of the 5-year US T-note yield plus the historical corporate spread, net of income tax.

(7) = (4) x (5) + (6) x [1 - (5)]

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APPENDIX A: CALCULATION OF WEIGHTED AVERAGE COST OF CAPITAL AND RETURN ON INVESTMENTS (CONTINUED)

TABLE A.2 CALCULATION OF RETURN ON INVESTMENTS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Security Description	Investment Portfolio	Yield Curve, Maturity and Spread	Roll-over Period	Income Tax Rate	Post-tax Return			
						IRR Model Time (yrs)		
Bonds, of which	73.6%				Static	1.00	2.00	5.00
Government Direct Obligations	6.5%							
< 1yr	2.0%	6 mo US T-bill	0.50 yrs	21.00%	1.40%	2.85%	2.80%	2.34%
1 – 5 yrs	2.5%	2.5 yr US T-note	2.50 yrs	21.00%	1.76%	2.63%	2.63%	2.88%
5 – 10 yrs	1.3%	7.5 yr US T-note	7.50 yrs	21.00%	2.13%	2.94%	2.94%	2.94%
10 – 20 yrs	0.3%	15 yr US T-note	15.00 yrs	21.00%	2.24%	3.23%	3.23%	3.23%
> 20 yrs	0.4%	20 yr US T-note	20.00 yrs	21.00%	2.29%	3.47%	3.47%	3.47%
Collateralized Securities	6.5%							
< 1yr	0.8%	6 mo US T-bill + 50 basis points	0.50 yrs	21.00%	1.79%	3.25%	3.20%	2.73%
1 – 5 yrs	2.5%	2.5 yr US T-note + 50 basis points	2.50 yrs	21.00%	2.16%	3.02%	3.02%	3.27%
5 – 10 yrs	1.7%	7.5 yr US T-note + 50 basis points	7.50 yrs	21.00%	2.53%	3.34%	3.34%	3.34%
10 – 20 yrs	1.1%	15 yr US T-note + 50 basis points	15.00 yrs	21.00%	2.63%	3.63%	3.63%	3.63%
> 20 yrs	0.4%	20 yr US T-note + 50 basis points	20.00 yrs	21.00%	2.69%	3.86%	3.86%	3.86%
Tax-exempt Bonds	25.5%							
< 1yr	2.0%	6 mo US T-bill + Tax-exempt spread	0.50 yrs	5.25%	1.78%	3.53%	3.46%	2.91%
1 – 5 yrs	6.1%	2.5 yr US T-note + Tax-exempt spread	2.50 yrs	5.25%	2.31%	3.35%	3.35%	3.65%
5 – 10 yrs	8.7%	7.5 yr US T-note + Tax-exempt spread	7.50 yrs	5.25%	2.82%	3.79%	3.79%	3.79%
10 – 20 yrs	6.6%	15 yr US T-note + Tax-exempt spread	15.00 yrs	5.25%	3.06%	4.24%	4.24%	4.24%
> 20 yrs	2.2%	20 yr US T-note + Tax-exempt spread	20.00 yrs	5.25%	3.19%	4.57%	4.57%	4.57%
Industrial and Hybrid Securities (unaffiliated)	33.6%							
< 1yr	4.2%	6 mo US T-bill + Corp spread	0.50 yrs	21.00%	1.96%	3.42%	3.37%	2.91%
1 – 5 yrs	13.2%	2.5 yr US T-note + Corp spread	2.50 yrs	21.00%	2.61%	3.47%	3.47%	3.73%
5 – 10 yrs	12.2%	7.5 yr US T-note + Corp spread	7.50 yrs	21.00%	3.24%	4.05%	4.05%	4.05%
10 – 20 yrs	1.7%	15 yr US T-note + Corp spread	15.00 yrs	21.00%	3.43%	4.41%	4.41%	4.41%
> 20 yrs	2.3%	20 yr US T-note + Corp spread	20.00 yrs	21.00%	3.52%	4.65%	4.65%	4.65%
Industrial and Hybrid Securities (affiliated)	1.4%							
< 1yr	0.9%	6 mo US T-bill + Corp spread	0.50 yrs	5.25%	2.36%	4.11%	4.04%	3.49%
1 – 5 yrs	0.5%	2.5 yr US T-note + Corp spread	2.50 yrs	5.25%	3.13%	4.17%	4.17%	4.47%
5 – 10 yrs	0.0%	7.5 yr US T-note + Corp spread	7.50 yrs	5.25%	3.89%	4.86%	4.86%	4.86%
10 – 20 yrs	0.0%	15 yr US T-note + Corp spread	15.00 yrs	5.25%	4.11%	5.28%	5.28%	5.28%
> 20 yrs	0.0%	20 yr US T-note + Corp spread	20.00 yrs	5.25%	4.22%	5.57%	5.57%	5.57%
Stocks, of which	12.5%							
Preferred Stock	0.4%	5 year US T-note + 382 basis points	0.25 yrs	13.13%	5.52%	6.73%	6.55%	6.71%
Common Stock	12.1%	5 year US T-note + 765 basis points	0.25 yrs	18.33%	8.32%	9.45%	9.28%	9.43%
Mortgage Loans	1.8%							
Real Estate	0.4%							
Cash & Short-Term Investment	3.9%	3 month US T-bill	0.25 yrs	21.00%	1.25%	2.88%	2.73%	2.26%
All Other Assets*	7.9%							
				Post-Tax Return on Invested Funds, pre-Expense:	3.37%	4.44%	4.41%	4.43%
				Investment Expense**:	-0.17%	-0.17%	-0.17%	-0.17%
				Post-Tax Return on Invested Funds:	**3.20%**	**4.27%**	**4.23%**	**4.25%**

Table Notes:

(1) Government Direct Obligations include US Government Issuer Obligations and Non-US Government Issuer Obligations.
Collateralized Securities include Mortgage Backed, Loan Backed, or Structured Securities.
Tax-exempt Bonds include Issuer Obligations of US States, Territories, and Possessions, US Political Subdivisions of States, Territories, and Possessions, and US Special Revenue and Special Assessment Obligations.
Industrial and Hybrid Securities (unaffiliated) include Industrial and Miscellaneous and Hybrid Securities.
Industrial and Hybrid Securities (affiliated) include Parents, Subsidiaries, and Affiliates.

(2) Bond and total portfolio distributions are 3-year averages for 2014-2016, calculated from various annual editions of Best's Aggregates & Averages (Property-Casualty), Assets for Commercial Casualty Composite, p. 276, Column 3, Net Admitted Assets.
For each year 2014-2016, the maturity distribution pertains to all bonds owned as of December 31 at book/adjusted carrying value for Commercial Casualty Composite, Schedule D, Part 1A, Section 2.

(3) Spread to US treasury yields are either constant or varying by maturity (tax-exempt or corporate) as applicable.
The tax-exempt spread is a term structure of average historical spreads in forward rates at different maturities between US municipal bonds and US Treasuries.
Data on historical yields to US municipal bonds are from Bloomberg.
The corporate spread is a term structure of average historical spreads in forward rates at different maturities between US corporate bonds and US Treasuries.
Historical data on yields to US corporate bonds are from the US Department of Treasury.

(4) Applies only to the Dynamic estimate of the return on invested funds.
The roll-over period is the time interval at which the estimated yield is updated for the given security in the investment portfolio.
For bonds, the roll-over period is the bond's term to maturity. Forward yields for common and preferred stocks are updated quarterly.

(5) It is assumed that investment returns, except dividends and tax exempt municipal bond income, are taxed at 21%.
With respect to dividends, it is assumed that 50% of dividends received are tax exempt. It is further assumed that in accordance with the "pro-ration" provision, 25% of otherwise exempt municipal bond income and dividends are taxed at 21%. The portion of income attributable to capital appreciation is assumed to equal 66.1% while the income portion is 33.9%. The percentages were obtained from Morningstar's Analyst Research Center containing Table 6-7 previously published in Ibbotson SBBI Classic Yearbook, large company stocks, arithmetic mean.

(6) Static estimates of treasury yields are actual current yields.

(7)-(9) Apply only to the Dynamic estimate of the return on invested funds. Forward estimates of treasury yields at various maturities are from Moody's.

* Yields to mortgage loans, real estate, and all other assets are not directly estimated, but are assumed to be equal to the weighted average portfolio yield net of these categories.

** Investment expense calculated from Annual Statement data for the Commercial Casualty Composite by dividing Total Investment Expense by Cash and Invested Assets.
Total investment expense for 2016 from the Annual Statement, Exhibit of Net Investment Income.
Average of 2015 and 2016 cash and invested assets from Best's Aggregates and Averages (Property-Casualty), Assets for Commercial Casualty Composite, p.276, Line 12.

APPENDIX B: FEDERAL INCOME TAX INCURRED FROM INSURANCE OPERATIONS

Federal taxes on underwriting income, based on the Tax Cuts and Jobs Act of 2017, are calculated in the following tables on an annual basis. Columns (1) through (4) are the same under both the Static and Dynamic Estimates; the paid losses and LAE factors (col (5)) vary by Estimate. Note that investment taxes are accounted for in Appendix A. Annual tax is prorated when quarterly amounts are required.

TABLE B.1: FEDERAL INCOME TAX CALCULATION (STATIC ESTIMATE)

Time	(1) Written Premium Factor	(2) Unearned Premium Factor	(3) Expense and Taxes Factor	(4) Discount Factor	(5) Paid Losses and LAE Factor	(6) AY1 Paid Losses and LAE Factor	(7) AY2 Paid Losses and LAE Factor	(8) Discounted AY1 Unpaid Losses & LAE Factor	(9) Discounted AY2 Unpaid Losses & LAE Factor	(10) Federal Income Tax Factor
0.00	-	-	-	-	-	-	-	-	-	-
1.00	1.0000	0.4770	0.1444	0.8919	0.0945	0.0945	-	0.2729	-	0.0224
2.00	1.0000	-	0.1980	0.8783	0.3661	0.2273	0.1388	0.1522	0.2335	0.0106
3.00	1.0000	-	0.1980	0.8685	0.5079	0.2673	0.2406	0.1157	0.1405	0.0080
4.00	1.0000	-	0.1980	0.8551	0.5920	0.3104	0.2816	0.0771	0.1033	0.0062
5.00	1.0000	-	0.1980	0.8501	0.6361	0.3219	0.3142	0.0669	0.0738	0.0053
6.00	1.0000	-	0.1980	0.8455	0.6601	0.3341	0.3260	0.0561	0.0634	0.0047
7.00	1.0000	-	0.1980	0.8490	0.6769	0.3406	0.3363	0.0509	0.0543	0.0042
8.00	1.0000	-	0.1980	0.8567	0.6889	0.3464	0.3425	0.0464	0.0492	0.0037
9.00	1.0000	-	0.1980	0.8624	0.7042	0.3549	0.3492	0.0393	0.0440	0.0031
10.00	1.0000	-	0.1980	0.8794	0.7122	0.3567	0.3555	0.0386	0.0388	0.0026
11.00	1.0000	-	0.1980	0.8904	0.7170	0.3594	0.3576	0.0366	0.0378	0.0022
12.00	1.0000	-	0.1980	0.9016	0.7250	0.3640	0.3609	0.0329	0.0353	0.0019
13.00	1.0000	-	0.1980	0.9130	0.7282	0.3641	0.3641	0.0333	0.0329	0.0016
14.00	1.0000	-	0.1980	0.9246	0.7314	0.3665	0.3649	0.0315	0.0325	0.0014
15.00	1.0000	-	0.1980	0.9363	0.7346	0.3677	0.3669	0.0307	0.0311	0.0012
16.00	1.0000	-	0.1980	0.9483	0.7386	0.3701	0.3685	0.0289	0.0300	0.0009
17.00	1.0000	-	0.1980	0.9604	0.7410	0.3707	0.3703	0.0287	0.0287	0.0008
18.00	1.0000	-	0.1980	0.9726	0.7450	0.3734	0.3716	0.0264	0.0278	0.0006
19.00	1.0000	-	0.1980	0.9848	0.7458	0.3727	0.3732	0.0275	0.0266	0.0004
20.00	1.0000	-	0.1980	0.9870	0.7474	0.3742	0.3732	0.0260	0.0269	0.0003
21.00	1.0000	-	0.1980	0.9870	0.7490	0.3746	0.3744	0.0256	0.0258	0.0003
22.00	1.0000	-	0.1980	0.9870	0.7506	0.3756	0.3750	0.0246	0.0252	0.0003
23.00	1.0000	-	0.1980	0.9870	0.7538	0.3775	0.3763	0.0227	0.0240	0.0003
24.00	1.0000	-	0.1980	0.9870	0.7570	0.3790	0.3780	0.0213	0.0222	0.0003
25.00	1.0000	-	0.1980	0.9870	0.7594	0.3801	0.3794	0.0202	0.0209	0.0003
26.00	1.0000	-	0.1980	0.9870	0.7610	0.3807	0.3803	0.0195	0.0200	0.0003
27.00	1.0000	-	0.1980	0.9870	0.7626	0.3816	0.3810	0.0187	0.0193	0.0003
28.00	1.0000	-	0.1980	0.9870	0.7642	0.3824	0.3819	0.0179	0.0184	0.0003
29.00	1.0000	-	0.1980	0.9870	0.7658	0.3832	0.3826	0.0171	0.0177	0.0003
30.00	1.0000	-	0.1980	0.9870	0.7682	0.3846	0.3837	0.0158	0.0167	0.0003
31.00	1.0000	-	0.1980	0.9870	0.7755	0.3893	0.3862	0.0111	0.0142	0.0003
32.00	1.0000	-	0.1980	0.9870	0.7824	0.3921	0.3903	0.0083	0.0101	0.0002
33.00	1.0000	-	0.1980	0.9870	0.7890	0.3957	0.3933	0.0048	0.0071	0.0002
34.00	1.0000	-	0.1980	0.9870	0.7952	0.3986	0.3966	0.0020	0.0039	0.0002
35.00	1.0000	-	0.1980	0.9870	0.8011	0.4005	0.4005	-	-	0.0002

Column Notes:

(1) is Written Premium by time period, expressed as a factor, = Table 2 col (3)

(2) is Written Premium minus Earned Premium by time period, expressed as a factor, = Table 2 col (3) - Table 2 col (2)

(3) is Expenses and Taxes by time period, expressed as a factor, = Table 1 row (1) x Table 2 col (4)

(4) is calculated using a payout pattern derived from Best's 2016 Aggregates and Averages, Schedule P Table 1D, and a discount rate of 2.63%

(5) is Paid Losses and LAE by time period, expressed as a factor, = Table 1 row (7, Static) x Table 2 col (5)

(6) and (7) split the payments between the accident year coincident with the policy year ("AY1"), and the following accident year ("AY2"). Assuming that the payout pattern is linear between integer times, and that the average accident date for AY2 is two-thirds of a year later than the average accident date for AY1 , columns (6) and (7) are determined by solving these two equations simultaneously:

Col (6) + Col (7) = Col (5)

Col (7) = (2/3) * Col (6, previous row) + (1/3) * Col (6)

with Col (6, Time 1) = Col (5, Time 1) and Col (6, Time 35) = Col (7, Time 35)

(8) is the discounted difference between AY1 Losses and LAE that will ultimately be paid, and the amount already paid, = [col (6, Time 35) - (6)] x (4)

(9) is the discounted difference between AY2 Losses and LAE that will ultimately be paid, and the amount already paid, = [col (7, Time 35) - (7)] x col (4, previous row)

(10) Per IRS rules, federal income tax equals the tax rate (21%) times the adjusted underwriting income = 21% * { (1) - 0.8 * (2) - [(3) + (5) + (8) + (9)]}

APPENDIX B: FEDERAL INCOME TAX INCURRED FROM INSURANCE OPERATIONS (CONTINUED)

TABLE B.2: FEDERAL INCOME TAX CALCULATION (DYNAMIC ESTIMATE)

Time	(1) Written Premium Factor	(2) Unearned Premium Factor	(3) Expense and Taxes Factor	(4) Discount Factor	(5) Paid Losses and LAE Factor	(6) AY1 Paid Losses and LAE Factor	(7) AY2 Paid Losses and LAE Factor	(8) Discounted AY1 Unpaid Losses & LAE Factor	(9) Discounted AY2 Unpaid Losses & LAE Factor	(10) Federal Income Tax Factor
0.00	-	-	-	-	-	-	-	-	-	-
1.00	1.0000	0.4770	0.1444	0.8919	0.0975	0.0975	-	0.2815	-	0.0200
2.00	1.0000	-	0.1980	0.8783	0.3775	0.2344	0.1431	0.1569	0.2408	0.0056
3.00	1.0000	-	0.1980	0.8685	0.5238	0.2756	0.2481	0.1194	0.1448	0.0029
4.00	1.0000	-	0.1980	0.8551	0.6105	0.3201	0.2904	0.0795	0.1065	0.0012
5.00	1.0000	-	0.1980	0.8501	0.6559	0.3319	0.3240	0.0690	0.0761	0.0002
6.00	1.0000	-	0.1980	0.8455	0.6807	0.3446	0.3361	0.0579	0.0654	(0.0004)
7.00	1.0000	-	0.1980	0.8490	0.6981	0.3513	0.3468	0.0525	0.0560	(0.0010)
8.00	1.0000	-	0.1980	0.8567	0.7105	0.3572	0.3532	0.0478	0.0508	(0.0015)
9.00	1.0000	-	0.1980	0.8624	0.7262	0.3660	0.3601	0.0406	0.0453	(0.0021)
10.00	1.0000	-	0.1980	0.8794	0.7344	0.3678	0.3666	0.0398	0.0401	(0.0026)
11.00	1.0000	-	0.1980	0.8904	0.7394	0.3706	0.3687	0.0378	0.0390	(0.0030)
12.00	1.0000	-	0.1980	0.9016	0.7476	0.3754	0.3722	0.0339	0.0364	(0.0033)
13.00	1.0000	-	0.1980	0.9130	0.7509	0.3755	0.3754	0.0343	0.0339	(0.0036)
14.00	1.0000	-	0.1980	0.9246	0.7542	0.3779	0.3763	0.0325	0.0336	(0.0038)
15.00	1.0000	-	0.1980	0.9363	0.7576	0.3792	0.3784	0.0317	0.0321	(0.0041)
16.00	1.0000	-	0.1980	0.9483	0.7617	0.3817	0.3800	0.0298	0.0309	(0.0043)
17.00	1.0000	-	0.1980	0.9604	0.7642	0.3823	0.3819	0.0296	0.0296	(0.0045)
18.00	1.0000	-	0.1980	0.9726	0.7683	0.3851	0.3832	0.0272	0.0287	(0.0047)
19.00	1.0000	-	0.1980	0.9848	0.7691	0.3843	0.3848	0.0283	0.0275	(0.0048)
20.00	1.0000	-	0.1980	0.9870	0.7708	0.3859	0.3848	0.0268	0.0278	(0.0049)
21.00	1.0000	-	0.1980	0.9870	0.7724	0.3864	0.3861	0.0264	0.0266	(0.0049)
22.00	1.0000	-	0.1980	0.9870	0.7741	0.3874	0.3867	0.0253	0.0260	(0.0049)
23.00	1.0000	-	0.1980	0.9870	0.7774	0.3893	0.3880	0.0234	0.0247	(0.0049)
24.00	1.0000	-	0.1980	0.9870	0.7807	0.3908	0.3898	0.0219	0.0229	(0.0049)
25.00	1.0000	-	0.1980	0.9870	0.7832	0.3920	0.3912	0.0208	0.0216	(0.0049)
26.00	1.0000	-	0.1980	0.9870	0.7848	0.3926	0.3922	0.0202	0.0206	(0.0050)
27.00	1.0000	-	0.1980	0.9870	0.7865	0.3935	0.3929	0.0193	0.0199	(0.0050)
28.00	1.0000	-	0.1980	0.9870	0.7881	0.3943	0.3938	0.0185	0.0190	(0.0050)
29.00	1.0000	-	0.1980	0.9870	0.7898	0.3952	0.3946	0.0177	0.0182	(0.0050)
30.00	1.0000	-	0.1980	0.9870	0.7923	0.3966	0.3956	0.0162	0.0172	(0.0050)
31.00	1.0000	-	0.1980	0.9870	0.7998	0.4015	0.3982	0.0114	0.0146	(0.0050)
32.00	1.0000	-	0.1980	0.9870	0.8069	0.4044	0.4025	0.0086	0.0104	(0.0050)
33.00	1.0000	-	0.1980	0.9870	0.8136	0.4080	0.4056	0.0050	0.0074	(0.0050)
34.00	1.0000	-	0.1980	0.9870	0.8200	0.4110	0.4090	0.0020	0.0040	(0.0050)
35.00	1.0000	-	0.1980	0.9870	0.8261	0.4131	0.4131	-	-	(0.0051)

Column Notes:

(1) is Written Premium by time period, expressed as a factor, = Table 2 col (3)

(2) is Written Premium minus Earned Premium by time period, expressed as a factor, = Table 2 col (3) - Table 2 col (2)

(3) is Expenses and Taxes by time period, expressed as a factor, = Table 1 row (1) x Table 2 col (4)

(4) is calculated using a payout pattern derived from Best's 2016 Aggregates and Averages, Schedule P Table 1D, and a discount rate of 2.63%

(5) is Paid Losses and LAE by time period, expressed as a factor, = Table 1 row (7, Dynamic) x Table 2 col (5)

(6) and (7) split the payments between the accident year coincident with the policy year ("AY1"), and the following accident year ("AY2"). Assuming that the payout pattern is linear between integer times, and that the average accident date for AY2 is two-thirds of a year later than the average accident date for AY1 , columns (6) and (7) are determined by solving these two equations simultaneously:

Col (6) + Col (7) = Col (5)

Col (7) = (2/3) * Col (6, previous row) + (1/3) * Col (6)

with Col (6, Time 1) = Col (5, Time 1) and Col (6, Time 35) = Col (7, Time 35)

(8) is the discounted difference between AY1 Losses and LAE that will ultimately be paid, and the amount already paid, = [col (6, Time 35) - (6)] x (4)

(9) is the discounted difference between AY2 Losses and LAE that will ultimately be paid, and the amount already paid, = [col (7, Time 35) - (7)] x col (4, previous row)

(10) Per IRS rules, federal income tax equals the tax rate (21%) times the adjusted underwriting income = 21% * { (1) - 0.8 * (2) - [(3) + (5) + (8) + (9)]}

NATIONAL COUNCIL ON COMPENSATION INSURANCE
INTERNAL RATE OF RETURN ANALYSIS
IOWA - VOLUNTARY

APPENDIX C: RESERVE-TO-SURPLUS RATIO
in 000's

Year End	(1) Unpaid Losses	(2) Unpaid Loss Adjustment Expense	(3) Unearned Premium	(4) Policyholder Surplus	(5) Ratio excl. Unearned Premium {(1)+(2)} /(4)	(6) Ratio incl. Unearned Premium {(1)+(2) +(3)}/(4)
2016	186,424,236	41,741,053	72,716,997	169,831,305	1.34	1.77
2015	185,919,427	42,816,231	73,469,477	169,017,203	1.35	1.79
2014	214,239,981	48,564,685	83,674,315	192,947,461	1.36	1.80
2013	215,275,673	47,841,227	81,229,642	182,832,920	1.44	1.88
2012	212,275,479	46,533,070	75,723,720	174,892,306	1.48	1.91
2012 - 2016	1,014,134,796	227,496,266	386,814,151	889,521,195	1.40	1.83

Selected Ratio including Unearned Premium: 1.83

Source: Columns (1) - (4) for the latest year are taken from Liabilities, Surplus and Other Funds on page 277 in Best's 2017 Aggregates & Averages, for Commercial Casualty Composite.

Appendix E – Calculation of Factor to Convert Voluntary Rates to Assigned Risk Rates

A factor of 1.300 is applied to the voluntary rates in order to convert to assigned risk rates. This factor is the proposed assigned risk differential in Iowa.

Part 4 Additional Information

- Definitions
- NCCI Affiliate List
- Key Contacts

Iowa

Workers Compensation Rate Filing – January 1, 2019

Definitions

Accident Year (AY): A loss accounting definition in which experience is summarized by the calendar year in which an accident occurred.

Calendar Year (CY):
1. The 12-month period beginning January 1 and ending December 31.
2. Method of accounting for all financial transactions occurring during a specific year.

Case Reserves: Reserves that an insurance company establishes for specific (known) claims.

DSR Level Premium: The standard earned premium that would result if business were written at NCCI state-approved loss costs or rates instead of at the company rates. It is the common benchmark level at which carriers report premium on the Financial Calls.

Frequency: The number of lost-time claims per million dollars of on-leveled, wage-adjusted premium.

Incurred Claim Count: The total of all claims reported, whether open or closed, as of a given valuation date. An indemnity claim is associated with a payment or case reserve for an indemnity loss (i.e., lost work time-related benefits) and excludes claims closed without an indemnity payment.

Lost-time Claims: Claims where an injured employee has received wage replacement benefits due to a compensable workplace injury.

Limited Losses: Losses that result after the application of NCCI's large loss procedure—in which individual large claims are limited to jurisdiction and year-specific large loss thresholds.

On-Level Factor: Applied to historical premiums and losses to adjust the historical experience to reflect approved loss cost/rate level changes as well as statutory benefit level changes implemented since that time.

Paid+Case Losses: The sum of paid losses and case reserves. Also known as “case incurred losses.”

Paid Losses: Losses that an insurance company has paid as a result of claim activity.

Policy Year:
- The one-year period beginning with the effective date or anniversary of a policy.
- A premium and loss accounting definition in which experience is summarized for all policies with effective dates in a given calendar year period.

Severity: The average cost per case (claim) calculated as ultimate losses divided by ultimate lost-time claim counts.

Iowa

Workers Compensation Rate Filing – January 1, 2019

Definitions

Ultimate Development Factor: For an aggregation of data, an estimate of the development that will occur between the data's current valuation date and the time when all claims are closed.

Unlimited Losses: Losses that have not been limited to jurisdiction and year-specific large loss thresholds as part of NCCI's large loss procedure.

Valuation Date: The date that premiums and losses are evaluated for reporting purposes. Premiums and losses may change over time from initial estimates to final values. Therefore, interim snapshots have associated valuation dates.

Wage Level Adjustment Factor: The ratio of the average workers' wages during the most recent time period to the average workers' wages during a historical time period.

Iowa

Workers Compensation Rate Filing – January 1, 2019

NCCI Affiliate List

A M C O INSURANCE COMPANY
ACADIA INSURANCE COMPANY
ACCIDENT FUND GENERAL INS CO
ACCIDENT FUND INS CO OF AMERICA
ACCIDENT FUND NATIONAL INS CO
ACE AMERICAN INSURANCE COMPANY
ACE FIRE UNDERWRITERS INSURANCE COMPANY
ACE PROPERTY & CASUALTY INSURANCE COMPANY
ACIG INS CO
ACUITY A MUTUAL INS COMPANY
ADDISON INSURANCE COMPANY
ADVANTAGE WC INSURANCE CO
AIG ASSURANCE COMPANY
AIG PROPERTY CASUALTY COMPANY
AIU INSURANCE CO (NATIONAL UNION FIRE OF PITTS PA)
AK NATIONAL INS CO
ALLIED EASTERN IND CO
ALLIED INSURANCE COMPANY OF AMERICA
ALLIED PROPERTY AND CASUALTY INS CO
ALLMERICA FINANCIAL ALLIANCE INS CO
ALLMERICA FINANCIAL BENEFIT INS CO
AMERICAN ALTERNATIVE INSURANCE CORPORATION
AMERICAN AUTOMOBILE INSURANCE CO
AMERICAN BUSINESS AND MERCANTILE INS MUTUAL INC
AMERICAN CASUALTY COMPANY OF READING P A
AMERICAN COMPENSATION INS CO
AMERICAN ECONOMY INS CO
AMERICAN FAMILY HOME INS CO
AMERICAN FAMILY INS CO
AMERICAN FAMILY MUTUAL INSURANCE COMPANY, S.I.
AMERICAN FIRE AND CASUALTY CO
AMERICAN GUARANTEE AND LIABILITY INS CO
AMERICAN HOME ASSUR CO-NATIONAL UNION FIRE OF PIT
AMERICAN INS CO
AMERICAN INTERSTATE INS CO
AMERICAN MINING INS CO
AMERICAN MODERN HOME INS CO
AMERICAN NATIONAL PROPERTY AND CASUALTY CO
AMERICAN SELECT INS CO
AMERICAN STATES INS CO A SAFECO COMPANY
AMERICAN ZURICH INS CO
AMERISURE INS CO
AMERISURE MUTUAL INS CO
AMERISURE PARTNERS INS CO
AMGUARD INS CO
AMTRUST INSURANCE CO OF KS INC
ARCH INSURANCE COMPANY
ARGONAUT GREAT CENTRAL INS CO
ARGONAUT INS CO
ARGONAUT MIDWEST INS CO
ASSOCIATED INDEMNITY CORP
ATLANTA INTERNATIONAL INS CO
ATLANTIC SPECIALTY INS CO (ONEBEACON)
ATLANTIC STATES INS CO
AUSTIN MUTUAL INSURANCE COMPANY
AUTO OWNERS INS CO
BADGER MUTUAL INS CO
BANKERS STANDARD INS CO
BEARING MIDWEST CASUALTY COMPANY
BENCHMARK INSURANCE COMPANY
BERKLEY INSURANCE COMPANY
BERKLEY NATIONAL INSURANCE COMPANY
BERKLEY REGIONAL INS CO
BERKSHIRE HATHAWAY DIRECT INSURANCE COMPANY
BERKSHIRE HATHAWAY HOMESTATE INS CO
BITCO GENERAL INSURANCE CORPORATION
BITCO NATIONAL INSURANCE COMPANY
BLACKBOARD INSURANCE COMPANY
BRICKSTREET MUTUAL INS CO
BROTHERHOOD MUTUAL INS CO
CALIFORNIA INSURANCE COMPANY
CAROLINA CASUALTY INS CO
CELINA MUTUAL INS CO
CHARTER OAK FIRE INS CO
CHEROKEE INS CO
CHUBB INDEMNITY INS CO
CHUBB NATIONAL INS CO
CHURCH MUTUAL INS CO
CIMARRON INSURANCE COMPANY INC
CINCINNATI CASUALTY COMPANY
CINCINNATI INDEMNITY COMPANY
CINCINNATI INS CO
CITIZENS INS CO OF AMERICA
CLERMONT INS CO
COLONIAL AMERICAN CASUALTY & SURETY CO
COLUMBIA MUTUAL INSURANCE CO
COLUMBIA NATIONAL INS CO
COMMERCE AND INDUSTRY INS CO
COMMERCIAL CASUALTY INS CO
CONSOLIDATED INS CO
CONTINENTAL CASUALTY CO
CONTINENTAL INDEMNITY CO
CONTINENTAL INS CO
CONTINENTAL WESTERN INSURANCE COMPANY
CRESTBROOK INS CO
CRUM AND FORSTER INDEMNITY CO
DAKOTA TRUCK UNDERWRITERS
DEPOSITORS INS CO
DIAMOND INS CO
DISCOVER PROPERTY & CASUALTY INS CO
DONEGAL MUTUAL INS CO
EASTERN ADVANTAGE ASSURANCE COMPANY
EASTERN ALLIANCE INSURANCE COMPANY
EASTGUARD INS CO
ELECTRIC INS CO
EMC PROPERTY & CASUALTY COMPANY
EMCASCO INS CO
EMPLOYERS ASSURANCE COMPANY
EMPLOYERS COMPENSATION INS CO
EMPLOYERS INS CO OF WAUSAU
EMPLOYERS MUTUAL CASUALTY CO
EMPLOYERS PREFERRED INS CO
ENDURANCE AMERICAN INS CO
ENDURANCE ASSURANCE CORPORATION
EVEREST DENALI INSURANCE COMPANY
EVEREST NATIONAL INS CO
EVEREST PREMIER INSURANCE COMPANY
EVEREST REINSURANCE CO DIRECT
EXECUTIVE RISK INDEMNITY INC
EXPLORER INS CO

Iowa

Workers Compensation Rate Filing – January 1, 2019

NCCI Affiliate List

FALLS LAKE NATIONAL INSURANCE CO
FARM BUREAU PROPERTY & CASUALTY INS CO
FARMERS INSURANCE EXCHANGE
FARMINGTON CASUALTY COMPANY
FARMLAND MUTUAL INSURANCE COMPANY
FEDERAL INSURANCE COMPANY
FEDERATED MUTUAL INS CO
FEDERATED RESERVE INSURANCE CO
FEDERATED RURAL ELECTRIC INS EXCHANGE
FEDERATED SERVICE INS CO
FIDELITY & DEPOSIT COMPANY OF MARYLAND
FIDELITY & GUARANTY INS UNDERWRITERS
FIDELITY & GUARANTY INSURANCE CO
FIRE INS EXCHANGE
FIREMANS FUND INSURANCE CO
FIREMENS INS CO OF WASHINGTON DC
FIRST DAKOTA INDEMNITY CO
FIRST LIBERTY INS CORP
FIRST NATIONAL INS CO OF AMERICA
FIRSTCOMP INSURANCE CO
FLORISTS MUTUAL INSURANCE CO
FOREMOST INS CO GRAND RAPIDS MICHIGAN
FOREMOST PROPERTY & CAS INS
FOREMOST SIGNATURE INS CO
FRANK WINSTON CRUM INSURANCE CO
GENERAL CASUALTY COMPANY OF WISCONSIN
GENERAL CASUALTY INSURANCE COMPANY
GENERAL INS CO OF AMERICA
GENESIS INS CO
GRANITE STATE INSURANCE COMPANY
GRAPHIC ARTS MUTUAL INS CO
GRAY INSURANCE COMPANY
GREAT AMERICAN ALLIANCE INS CO
GREAT AMERICAN ASSURANCE COMPANY
GREAT AMERICAN INS CO OF NY
GREAT AMERICAN INSURANCE COMPANY
GREAT AMERICAN SPIRIT INS CO
GREAT DIVIDE INSURANCE COMPANY
GREAT MIDWEST INS CO
GREAT NORTHERN INS CO
GREAT WEST CASUALTY COMPANY
GREATER NY MUTUAL INS CO
GREENWICH INS CO
GRINNELL MUTUAL REINSURANCE CO
GRINNELL SELECT INS CO
GUARANTEE INS CO
GUIDEONE ELITE INS CO
GUIDEONE MUTUAL INS CO
HANOVER AMERICAN INS CO
HANOVER INS CO
HARLEYSVILLE INSURANCE COMPANY
HARLEYSVILLE LAKE STATES INSURANCE COMPANY
HARLEYSVILLE PREFERRED INSURANCE CO
HARLEYSVILLE WORCESTER INSURANCE CO
HARTFORD ACCIDENT AND INDEMNITY CO
HARTFORD CASUALTY INS CO
HARTFORD FIRE INSURANCE CO
HARTFORD INS CO OF IL
HARTFORD INS CO OF MIDWEST
HARTFORD INS CO OF THE SOUTHEAST
HARTFORD UNDERWRITERS INS CO
HASTINGS MUTUAL INS CO
HAWKEYE-SECURITY INS CO
HDI GLOBAL INSURANCE COMPANY
IA AMERICAN INS CO
IA LONG TERM CARE RISK MGMT ASSN
IA MUTUAL INS CO
IL EMCASCO INS CO
ILLINOIS CASUALTY COMPANY
ILLINOIS INSURANCE COMPANY
ILLINOIS NATIONAL INSURANCE COMPANY
IMPERIUM INSURANCE COMPANY
IMT INS CO
INDEMNITY INS CO OF N AMERICA (INA INS) (CT GEN)
INDIANA INSURANCE COMPANY
INS CO OF NORTH AMERICA
INS CO OF THE STATE PA
INS CO OF THE WEST
INTEGRITY MUTUAL INS CO
INTEGRITY PROPERTY & CASUALTY INS CO
INTREPID INSURANCE COMPANY
LAFAYETTE INS CO
LE MARS INS CO
LIBERTY INS CORP
LIBERTY INSURANCE UNDERWRITERS INC
LIBERTY MUTUAL FIRE INS CO
LIBERTY MUTUAL INS CO
LM INS CORP
MA BAY INS CO
MAG MUTUAL INS CO
MANUFACTURERS ALLIANCE INS CO
MARKEL AMERICAN INSURANCE CO
MARKEL INSURANCE CO
MEMIC INDEMNITY CO
MERIDIAN SECURITY INSURANCE COMPANY
MID CENTURY INS CO
MIDDLESEX INS CO
MIDVALE INDEMNITY COMPANY
MIDWEST BUILDERS CASUALTY MUTUAL COMPANY
MIDWEST EMPLOYERS CASUALTY CO
MIDWEST FAMILY ADVANTAGE INSURANCE CO
MIDWEST FAMILY MUTUAL INS CO
MIDWEST INS CO
MIDWESTERN INDEMNITY CO
MILBANK INSURANCE COMPANY
MILFORD CASUALTY INSURANCE CO
MITSUI SUMITOMO INS CO OF AMERICA
MITSUI SUMITOMO INS USA INC
MOTORISTS COMMERCIAL MUTUAL INSURANCE COMPANY
NATIONAL AMERICAN INS CO
NATIONAL CASUALTY CO
NATIONAL FIRE INS CO OF HARTFORD
NATIONAL INTERSTATE INS CO
NATIONAL LIABILITY & FIRE INSURANCE CO
NATIONAL SURETY CORP
NATIONAL UNION FIRE INS CO OF PITTSBURGH PA
NATIONWIDE AGRIBUSINESS INS CO
NATIONWIDE MUTUAL FIRE INS CO
NATIONWIDE MUTUAL INS CO
NETHERLANDS INSURANCE COMPANY

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NCCI Affiliate List

NEW HAMPSHIRE INSURANCE COMPANY
NEW YORK MARINE AND GENERAL INSURANCE CO
NORGUARD INS CO
NORTH AMERICAN ELITE INSURANCE CO
NORTH AMERICAN SPECIALTY INS CO
NORTH POINTE INS CO
NORTH RIVER INS CO
NORTHSTONE INSURANCE COMPANY
NOVA CASUALTY COMPANY
OAK RIVER INSURANCE COMPANY
OBI AMERICA INSURANCE COMPANY
OBI NATIONAL INSURANCE COMPANY
OH CASUALTY INS CO
OH FARMERS INS CO
OHIO SECURITY INS CO
OLD REPUBLIC GENERAL INSURANCE CORPORATION
OLD REPUBLIC INS CO
OWNERS INSURANCE COMPANY
PA MANUFACTURERS ASSN INS CO
PA MANUFACTURERS INDEMNITY CO
PACIFIC EMPLOYERS INS CO
PACIFIC INDEMNITY CO
PACIFIC INS CO LTD
PARTNERS MUTUAL INS CO
PATRONS MUTUAL INS CO OF CT
PEERLESS INDEMNITY INS CO
PEERLESS INSURANCE COMPANY
PEKIN INS CO
PENN MILLERS INS CO
PENNSYLVANIA INSURANCE COMPANY
PETROLEUM CASUALTY CO
PHARMACISTS MUTUAL INS CO
PHOENIX INS CO
PINNACLEPOINT INSURANCE COMPANY
PIONEER SPECIALTY INSURANCE COMPANY
PLAZA INSURANCE CO
PRAETORIAN INSURANCE COMPANY
PREFERRED PROFESSIONAL INSURANCE COMPANY
PREVISOR INSURANCE COMPANY
PROPERTY AND CASUALTY INS CO OF HARTFORD
PROSELECT INSURANCE COMPANY
PROTECTIVE INS CO
QBE INSURANCE CORPORATION
REDWOOD FIRE & CASUALTY INS CO
REGENT INSURANCE COMPANY
REPUBLIC INDEMNITY COMPANY OF AMERICA
RIVERPORT INSURANCE COMPANY
RLI INSURANCE COMPANY
ROCKWOOD CASUALTY INS CO
RURAL TRUST INSURANCE COMPANY
SAFECO INS CO OF AMERICA
SAFETY FIRST INS CO
SAFETY NATIONAL CASUALTY CORP
SAGAMORE INSURANCE CO
SAMSUNG FIRE AND MARINE INS CO LTD USB
SEABRIGHT INSURANCE CO (CLEARSPRING)
SECURA INSURANCE A MUTUAL CO
SECURA SUPREME INS CO
SECURITY NATIONAL INS CO (AMTRUST GROUP)
SELECTIVE INS CO OF SC
SELECTIVE INS CO OF THE SOUTHEAST
SELECTIVE INSURANCE COMPANY OF AMERICA
SELECTIVE WAY INS CO
SENECA INSURANCE CO
SENTINEL INS CO
SENTRY CASUALTY CO
SENTRY INSURANCE A MUTUAL CO
SENTRY SELECT INSURANCE COMPANY
SEQUOIA INSURANCE CO
SFM MUTUAL INS CO
SFM SAFE INSURANCE COMPANY
SFM SELECT INSURANCE COMPANY
SOCIETY INSURANCE A MUTUAL COMPANY
SOMPO AMERICA FIRE & MARINE INSURANCE COMPANY
SOMPO AMERICA INSURANCE COMPANY
SOUTHERN INS CO
ST PAUL FIRE AND MARINE INS CO
ST PAUL GUARDIAN INS CO
ST PAUL MERCURY INS CO
ST PAUL PROTECTIVE INS CO
STANDARD FIRE INSURANCE COMPANY
STAR INS CO
STARNET INSURANCE COMPANY
STARR INDEMNITY AND LIABILITY CO
STARR SPECIALTY INSURANCE COMPANY
STARSTONE NATIONAL INSURANCE COMPANY
STATE AUTO PROPERTY AND CASUALTY INS CO
STATE AUTOMOBILE MUTUAL INS CO
STATE FARM FIRE AND CASUALTY CO
STATE NATIONAL INSURANCE COMPANY
STONINGTON INS CO
SUMMITPOINT INSURANCE COMPANY
SUNZ INSURANCE COMPANY
T H E INSURANCE COMPANY
TECHNOLOGY INSURANCE CO
THE TRAVELERS CASUALTY COMPANY
TNUS INSURANCE CO
TOKIO MARINE AMERICA INSURANCE CO
TRANS PACIFIC INS CO
TRANSGUARD INS CO OF AMERICA INC
TRANSPORTATION INS CO
TRAVELERS CASUALTY AND SURETY CO
TRAVELERS CASUALTY INS CO OF AMERICA
TRAVELERS INDEMNITY CO
TRAVELERS INDEMNITY CO OF AMERICA
TRAVELERS INDEMNITY CO OF CT
TRAVELERS INSURANCE CO
TRAVELERS PROPERTY CASUALTY CO OF AMERICA
TRI STATE INSURANCE COMPANY OF MINNESOTA
TRIANGLE INSURANCE COMPANY INC
TRIUMPHE CASUALTY COMPANY
TRUCK INSURANCE EXCHANGE
TRUMBULL INS CO
TWIN CITY FIRE INS CO
UNION INS CO OF PROVIDENCE
UNION INSURANCE COMPANY
UNITED FIRE AND CASUALTY CO
UNITED STATES FIDELITY AND GUARANTY CO
UNITED WI INS CO
US FIRE INS CO

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UTICA MUTUAL INS CO
VALLEY FORGE INS CO
VANLINER INS CO
VANTAPRO SPECIALTY INS CO
VIGILANT INS CO
WADENA INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY
WAUSAU UNDERWRITERS INSURANCE COMPANY
WESCO INSURANCE COMPANY (AMTRUST GROUP)
WEST AMERICAN INS CO
WEST BEND MUTUAL INS CO
WESTCHESTER FIRE INSURANCE COMPANY
WESTERN AGRICULTURAL INS CO
WESTERN NATIONAL ASSURANCE CO
WESTERN NATIONAL MUTUAL INS CO
WESTFIELD INS CO
WESTFIELD NATIONAL INS CO
WESTPORT INSURANCE CORPORATION
WILLIAMSBURG NATIONAL INS CO
WORK FIRST CASUALTY CO
XL INS CO OF NY INC
XL INSURANCE AMERICA INC
XL SPECIALTY INS CO
ZENITH INS CO
ZNAT INS CO
ZURICH AMERICAN INS CO
ZURICH AMERICAN INS CO OF IL

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