# RHODE ISLAND

# TECHNICAL SUPPLEMENT

## PROPOSED EFFECTIVE AUGUST 1, 2014

November 25, 2013


Honorable Paul McGreevy
Director
State of Rhode Island and Providence Plantations
Department of Business Regulation
Insurance Division
1511 Pontiac Ave
Cranston, RI  02920

Attention:  Paula Pallozzi, Chief Property & Casualty Insurance Rate Analyst


**Re:     Technical Supplement for Rhode Island Workers Compensation Advisory
          Loss Costs and Rating Values Filing – Effective August 1, 2014**


Dear Director McGreevy:

We are enclosing for your review, supporting actuarial and statistical data used to produce the results of the proposed August 1, 2014 advisory loss costs and rating values filing.

As always, if you should have any questions or need additional information, please do not hesitate to contact me at (802) 454-1800 or Karen Ayres at (201) 386-2636.


Respectfully Submitted,


Laura Backus Hall, CPCU
State Relations Executive

**RHODE ISLAND**

**WORKERS COMPENSATION FILING – AUGUST 1, 2014**

**Actuarial Certification and Disclosure Statement**

**Actuarial Certification**

I, Karen Ayres, am a Director and 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.

*Karen J. Ayres*

Karen Ayres, FCAS, MAAA
Director and Actuary
Actuarial and Economic Services

**Documents Comprising the Report**

There are two documents comprising the full actuarial report:

- The loss cost filing includes a description of the key components reviewed in determining the overall average loss cost level change, the proposed loss costs and experience rating values by class code, and updated miscellaneous values and retrospective rating values.
- The Technical Supplement shows detailed calculations supporting the information conveyed in the filing document.

**RHODE ISLAND**

**WORKERS COMPENSATION FILING – AUGUST 1, 2014**

**Actuarial Certification and Disclosure Statement**

**Data Sources and Dates**

The overall average loss cost level change is based on a review of Financial Call Data, which is aggregated workers compensation data reported to NCCI annually. In this filing, Financial Call Data submissions received after August 19, 2013 were not considered for inclusion in the analysis.

Loss cost 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 September 20, 2013 were not considered for inclusion in the analysis.

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 October 30, 2013. 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.

**Methodology and Assumptions**

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

Generally, the methodology used in this filing is not materially different from previous NCCI filings approved in Rhode Island.

**RHODE ISLAND**

**WORKERS COMPENSATION FILING – AUGUST 1, 2014**

**Actuarial Certification and Disclosure Statement**

**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 [loss costs/rates] proposed in this filing.

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**SUMMARY OF PROPOSED CHANGES**

| **Proposed Effective Date** | **August 1, 2014** |
|---|---|

**I. Industrial Classifications**

Overall Proposed Change in Loss Cost Level

| New and Renewal Policies | +3.0% |
|---|---|

By Component

| Change in Experience, Trend and Benefits | +2.6% |
|---|---|
| Change in Loss Based Expenses | +0.4% |
| Overall Loss Cost Level Change | +3.0% |

By Industry Group

| Manufacturing | -0.5% |
|---|---|
| Contracting | +2.9% |
| Office & Clerical | +0.6% |
| Goods & Services | +5.2% |
| Miscellaneous | +3.1% |
| Overall | +3.0% |

**II. "F" Classifications**

Overall Proposed Change in Voluntary Loss Cost Level

| New and Renewal Policies | +5.9% |
|---|---|

# RHODE ISLAND

## EXHIBIT I

## Determination of Indicated Loss Cost Level Change

**Section A - Policy Year 2011 Experience**

**Premium:**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium Developed to Ultimate (Appendix A-II) | $129,025,961 |
| (2) | Premium On-level Factor (Appendix A-I) | 1.120 |
| (3) | Premium Available for Benefit Costs = (1) x (2) | $144,509,076 |

**Indemnity Benefit Cost:**

| | | |
|---|---|---:|
| (4) | Limited Indemnity Losses Developed to Ultimate (Appendix A-II) | $76,536,899 |
| (5) | Indemnity Loss On-level Factor (Appendix A-I) | 1.015 |
| (6) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (7) | Composite Adjustment Factor = (5) x (6) | 1.200 |
| (8) | Adjusted Limited Indemnity Losses = (4) x (7) | $91,844,279 |
| (9) | Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (8) / (3) | 0.636 |
| (10) | Factor to Reflect Indemnity Trend (Appendix A-III) | 1.000 |
| (11) | Projected Limited Indemnity Cost Ratio = (9) x (10) | 0.636 |
| (12) | Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (13) | Projected Indemnity Cost Ratio = (11) x (12) | 0.665 |
| (14) | Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C) | 1.001 |
| (15) | Projected Indemnity Cost Ratio including Benefit Changes = (13) x (14) | 0.666 |

**Medical Benefit Cost:**

| | | |
|---|---|---:|
| (16) | Limited Medical Losses Developed to Ultimate (Appendix A-II) | $38,482,413 |
| (17) | Medical Loss On-level Factor (Appendix A-I) | 1.000 |
| (18) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (19) | Composite Adjustment Factor = (17) x (18) | 1.182 |
| (20) | Adjusted Limited Medical Losses = (16) x (19) | $45,486,212 |
| (21) | Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (20) / (3) | 0.315 |
| (22) | Factor to Reflect Medical Trend (Appendix A-III) | 1.018 |
| (23) | Projected Limited Medical Cost Ratio = (21) x (22) | 0.321 |
| (24) | Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (25) | Projected Medical Cost Ratio = (23) x (24) | 0.335 |
| (26) | Factor to Reflect Proposed Changes in Medical Benefits (Appendix C) | 1.000 |
| (27) | Projected Medical Cost Ratio including Benefit Changes = (25) x (26) | 0.335 |

**Total Benefit Cost:**

| | | |
|---|---|---:|
| (28) | Indicated Change Based on Experience, Trend and Benefits = (15) + (27) | 1.001 |

**RHODE ISLAND**

**EXHIBIT I**

**Determination of Indicated Loss Cost Level Change**

**Section B - Policy Year 2010 Experience**

**Premium:**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium Developed to Ultimate (Appendix A-II) | $123,169,689 |
| (2) | Premium On-level Factor (Appendix A-I) | 1.144 |
| (3) | Premium Available for Benefit Costs = (1) x (2) | $140,906,124 |

**Indemnity Benefit Cost:**

| | | |
|---|---|---:|
| (4) | Limited Indemnity Losses Developed to Ultimate (Appendix A-II) | $78,274,737 |
| (5) | Indemnity Loss On-level Factor (Appendix A-I) | 1.025 |
| (6) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (7) | Composite Adjustment Factor = (5) x (6) | 1.212 |
| (8) | Adjusted Limited Indemnity Losses = (4) x (7) | $94,868,981 |
| (9) | Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (8) / (3) | 0.673 |
| (10) | Factor to Reflect Indemnity Trend (Appendix A-III) | 1.000 |
| (11) | Projected Limited Indemnity Cost Ratio = (9) x (10) | 0.673 |
| (12) | Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (13) | Projected Indemnity Cost Ratio = (11) x (12) | 0.703 |
| (14) | Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C) | 1.001 |
| (15) | Projected Indemnity Cost Ratio including Benefit Changes = (13) x (14) | 0.704 |

**Medical Benefit Cost:**

| | | |
|---|---|---:|
| (16) | Limited Medical Losses Developed to Ultimate (Appendix A-II) | $40,217,311 |
| (17) | Medical Loss On-level Factor (Appendix A-I) | 1.000 |
| (18) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (19) | Composite Adjustment Factor = (17) x (18) | 1.182 |
| (20) | Adjusted Limited Medical Losses = (16) x (19) | $47,536,862 |
| (21) | Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (20) / (3) | 0.337 |
| (22) | Factor to Reflect Medical Trend (Appendix A-III) | 1.023 |
| (23) | Projected Limited Medical Cost Ratio = (21) x (22) | 0.345 |
| (24) | Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (25) | Projected Medical Cost Ratio = (23) x (24) | 0.361 |
| (26) | Factor to Reflect Proposed Changes in Medical Benefits (Appendix C) | 1.000 |
| (27) | Projected Medical Cost Ratio including Benefit Changes = (25) x (26) | 0.361 |

**Total Benefit Cost:**

| | | |
|---|---|---:|
| (28) | Indicated Change Based on Experience, Trend and Benefits = (15) + (27) | 1.065 |

# RHODE ISLAND

## EXHIBIT I

## Determination of Indicated Loss Cost Level Change

**Section C - Policy Year 2009 Experience**

**Premium:**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium Developed to Ultimate (Appendix A-II) | $122,899,382 |
| (2) | Premium On-level Factor (Appendix A-I) | 1.139 |
| (3) | Premium Available for Benefit Costs = (1) x (2) | $139,982,396 |

**Indemnity Benefit Cost:**

| | | |
|---|---|---:|
| (4) | Limited Indemnity Losses Developed to Ultimate (Appendix A-II) | $73,367,967 |
| (5) | Indemnity Loss On-level Factor (Appendix A-I) | 1.026 |
| (6) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (7) | Composite Adjustment Factor = (5) x (6) | 1.213 |
| (8) | Adjusted Limited Indemnity Losses = (4) x (7) | $88,995,344 |
| (9) | Adjusted Limited Indemnity Cost Ratio excluding Trend and Benefits = (8) / (3) | 0.636 |
| (10) | Factor to Reflect Indemnity Trend (Appendix A-III) | 1.000 |
| (11) | Projected Limited Indemnity Cost Ratio = (9) x (10) | 0.636 |
| (12) | Factor to Adjust Indemnity Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (13) | Projected Indemnity Cost Ratio = (11) x (12) | 0.665 |
| (14) | Factor to Reflect Proposed Changes in Indemnity Benefits (Appendix C) | 1.001 |
| (15) | Projected Indemnity Cost Ratio including Benefit Changes = (13) x (14) | 0.666 |

**Medical Benefit Cost:**

| | | |
|---|---|---:|
| (16) | Limited Medical Losses Developed to Ultimate (Appendix A-II) | $38,000,689 |
| (17) | Medical Loss On-level Factor (Appendix A-I) | 1.000 |
| (18) | Factor to Include Loss-based Expenses (Exhibit II) | 1.182 |
| (19) | Composite Adjustment Factor = (17) x (18) | 1.182 |
| (20) | Adjusted Limited Medical Losses = (16) x (19) | $44,916,814 |
| (21) | Adjusted Limited Medical Cost Ratio excluding Trend and Benefits = (20) / (3) | 0.321 |
| (22) | Factor to Reflect Medical Trend (Appendix A-III) | 1.028 |
| (23) | Projected Limited Medical Cost Ratio = (21) x (22) | 0.330 |
| (24) | Factor to Adjust Medical Cost Ratio to an Unlimited Basis (Appendix A-II) | 1.045 |
| (25) | Projected Medical Cost Ratio = (23) x (24) | 0.345 |
| (26) | Factor to Reflect Proposed Changes in Medical Benefits (Appendix C) | 1.000 |
| (27) | Projected Medical Cost Ratio including Benefit Changes = (25) x (26) | 0.345 |

**Total Benefit Cost:**

| | | |
|---|---|---:|
| (28) | Indicated Change Based on Experience, Trend and Benefits = (15) + (27) | 1.011 |

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## EXHIBIT I

## Determination of Indicated Loss Cost Level Change

**Section D - Indicated Change Based on Experience, Trend and Benefits**

(1) Policy Year 2011 Indicated Change Based on Experience, Trend, and Benefits                1.001

(2) Policy Year 2010 Indicated Change Based on Experience, Trend, and Benefits                1.065

(3) Policy Year 2009 Indicated Change Based on Experience, Trend, and Benefits                1.011

(4) Indicated Change Based on Experience, Trend and Benefits = [(1)+(2)+(3)] / 3                1.026


**Section E - Application of the Change in Loss-based Expenses**

(1) Indicated Loss Cost Level Change                1.026

(2) Effect of the Change in Loss-based Expenses (Exhibit II)                1.004

(3) Indicated Change Modified to Reflect the Change in Loss-based Expenses = (1) x (2)                1.030

**EXHIBIT I**

**Determination of Indicated Loss Cost Level Change**

**Section F - Distribution of Overall Loss Cost Level Change to Industry Groups**

Industry Group Differentials (Appendix A-V):

| | |
|---|---|
| Manufacturing | 0.966 |
| Contracting | 0.999 |
| Office & Clerical | 0.977 |
| Goods & Services | 1.021 |
| Miscellaneous | 1.001 |

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

| Industry Group | (1)<br>Final Overall<br>Loss Cost<br>Level Change | (2)<br>Industry<br>Group<br>Differential | (3) = (1) x (2)<br>Final Loss Cost<br>Level Change<br>by Industry Group | |
|---|---|---|---|---|
| Manufacturing | 1.030 | 0.966 | 0.995 | (-0.5%) |
| Contracting | 1.030 | 0.999 | 1.029 | (+2.9%) |
| Office & Clerical | 1.030 | 0.977 | 1.006 | (+0.6%) |
| Goods & Services | 1.030 | 1.021 | 1.052 | (+5.2%) |
| Miscellaneous | 1.030 | 1.001 | 1.031 | (+3.1%) |
| Overall | 1.030 | 1.000 | 1.030 | (+3.0%) |

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**EXHIBIT II**

**Workers Compensation Loss-based Expense Provision**

**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 18.7% 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 |
|---|---|---|---|
| 2008 | 18.4% | 11.3% | 7.1% |
| 2009 | 19.4% | 11.7% | 7.7% |
| 2010 | 19.3% | 12.0% | 7.3% |
| 2011 | 19.5% | 12.5% | 7.0% |
| 2012 | 20.3% | 12.9% | 7.4% |
| Countrywide selected: | 19.9% | 12.7% | 7.2% |
| **Rhode Island selected:** | **18.7%** | **11.5%** | **7.2%** |

(11.5% = 12.7% x 0.904)

**Section B - Determination of Rhode Island DCCE Relativity**

| | | |
|---|---|---|
| (1a) | Rhode Island paid losses (in '000s) | 156,384 |
| (1b) | Rhode Island paid DCCE (in '000s) | 16,206 |
| (1c) | Ratio (1b)/(1a) | 10.4% |
| (2a) | Countrywide paid losses (in '000s) | 68,276,797 |
| (2b) | Countrywide paid DCCE (in '000s) | 7,882,729 |
| (2c) | Ratio (2b)/(2a) | 11.5% |
| (3) | Rhode Island DCCE relativity (1c)/(2c) | 0.904 |

**Section C - Proposed Change in Rhode Island Loss Adjustment Expense Provision**

| | | |
|---|---|---|
| (1) | Current Rhode Island LAE Provision | 18.2% |
| (2) | Proposed Rhode Island LAE Provision | 18.7% |
| (3) | Proposed Change in LAE Provision | 1.004 |
| | = [ 1.0 + (2) ] / [ 1.0 + (1) ] - 1 | 0.4% |

**Notes**

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

## Determination of Policy Year On-level Factors

### Section A - Factor Adjusting 2011 Policy Year Premium to Present Level

| | Date | (1) Loss Cost Level Change | (2) Cumulative Index | (3) Weight | (4) Product (2)x(3) | (5) Adj. Factor Present Index/ Sum Column (4) | (6) Off-balance Adjustment Factor* | (7) Premium Adjustment Factor (5)x(6) |
|---|---|---|---|---|---|---|---|---|
| NR | 06/01/10 | Base | 1.000 | 0.424 | 0.424 | 1.137 | 0.985 | 1.120 |
| NR | 06/01/11 | 1.036 | 1.036 | 0.576 | 0.597 | | | |
| NR | 07/01/12 | 1.053 | 1.091 | | | | | |
| NR | 01/01/13 | 0.991 | 1.081 | | | | | |
| NR | 08/01/13 | 1.074 | 1.161 | | | | | |
| | | | | | 1.021 | | | |

### Section B - Factor Adjusting 2011 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) |
|---|---|---|---|---|---|
| 09/01/10 | Base | 1.000 | 0.271 | 0.271 | 1.015 |
| 09/01/11 | 1.001 | 1.001 | 0.281 | 0.281 | |
| 01/01/12 | 1.022 | 1.023 | 0.395 | 0.404 | |
| 09/01/12 | 1.002 | 1.025 | 0.053 | 0.054 | |
| | | | | 1.010 | |

### Section C - Factor Adjusting 2011 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) |
|---|---|---|---|---|---|
| 09/01/10 | Base | 1.000 | 0.271 | 0.271 | 1.000 |
| 09/01/11 | 1.000 | 1.000 | 0.281 | 0.281 | |
| 01/01/12 | 1.000 | 1.000 | 0.395 | 0.395 | |
| 09/01/12 | 1.000 | 1.000 | 0.053 | 0.053 | |
| | | | | 1.000 | |

NR   New and renewal business.
 *    0.985 = 0.979 / 0.994 = (Targeted Off-balance) / (Off-balance for Policy Year 2011)

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APPENDIX A-I

Determination of Policy Year On-level Factors

### Section D - Factor Adjusting 2010 Policy Year Premium to Present Level

| | Date | (1) Loss Cost Level Change | (2) Cumulative Index | (3) Weight | (4) Product (2)x(3) | (5) Adj. Factor Present Index/ Sum Column (4) | (6) Off-balance Adjustment Factor* | (7) Premium Adjustment Factor (5)x(6) |
|---|---|---|---|---|---|---|---|---|
| NR | 06/01/08 | Base | 1.000 | 0.424 | 0.424 | 1.156 | 0.990 | 1.144 |
| NR | 06/01/10 | 0.991 | 0.991 | 0.576 | 0.571 | | | |
| NR | 06/01/11 | 1.036 | 1.027 | | | | | |
| NR | 07/01/12 | 1.053 | 1.081 | | | | | |
| NR | 01/01/13 | 0.991 | 1.071 | | | | | |
| NR | 08/01/13 | 1.074 | 1.150 | | | | | |
| | | | | | 0.995 | | | |

### Section E - Factor Adjusting 2010 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) |
|---|---|---|---|---|---|
| 09/01/09 | Base | 1.000 | 0.271 | 0.271 | 1.025 |
| 09/01/10 | 1.000 | 1.000 | 0.676 | 0.676 | |
| 09/01/11 | 1.001 | 1.001 | 0.053 | 0.053 | |
| 01/01/12 | 1.022 | 1.023 | | | |
| 09/01/12 | 1.002 | 1.025 | | | |
| | | | | 1.000 | |

### Section F - Factor Adjusting 2010 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) |
|---|---|---|---|---|---|
| 09/01/09 | Base | 1.000 | 0.271 | 0.271 | 1.000 |
| 09/01/10 | 1.000 | 1.000 | 0.676 | 0.676 | |
| 09/01/11 | 1.000 | 1.000 | 0.053 | 0.053 | |
| 01/01/12 | 1.000 | 1.000 | | | |
| 09/01/12 | 1.000 | 1.000 | | | |
| | | | | 1.000 | |

NR  New and renewal business.
 *   0.990 = 0.979 / 0.989 = (Targeted Off-balance) / (Off-balance for Policy Year 2010)

**Determination of Policy Year On-level Factors**

### Section G - Factor Adjusting 2009 Policy Year Premium to Present Level

| | Date | (1)<br>Loss Cost<br>Level<br>Change | (2)<br>Cumulative<br>Index | (3)<br>Weight | (4)<br>Product<br>(2)x(3) | (5)<br>Adj. Factor<br>Present Index/<br>Sum Column (4) | (6)<br>Off-balance<br>Adjustment<br>Factor* | (7)<br>Premium<br>Adjustment<br>Factor<br>(5)x(6) |
|---|---|---|---|---|---|---|---|---|
| NR | 06/01/08 | Base | 1.000 | 1.000 | 1.000 | 1.150 | 0.990 | 1.139 |
| NR | 06/01/10 | 0.991 | 0.991 | | | | | |
| NR | 06/01/11 | 1.036 | 1.027 | | | | | |
| NR | 07/01/12 | 1.053 | 1.081 | | | | | |
| NR | 01/01/13 | 0.991 | 1.071 | | | | | |
| NR | 08/01/13 | 1.074 | 1.150 | | | | | |
| | | | | | 1.000 | | | |

### Section H - Factor Adjusting 2009 Policy Year Indemnity Losses To Present Benefit Level

| Date | (1)<br>Benefit<br>Level<br>Change | (2)<br>Cumulative<br>Index | (3)<br>Weight | (4)<br>Product<br>(2)x(3) | (5)<br>Adj. Factor<br>Present Index/<br>Sum Column (4) |
|---|---|---|---|---|---|
| 09/01/08 | Base | 1.000 | 0.271 | 0.271 | 1.026 |
| 09/01/09 | 1.002 | 1.002 | 0.676 | 0.677 | |
| 09/01/10 | 1.000 | 1.002 | 0.053 | 0.053 | |
| 09/01/11 | 1.001 | 1.003 | | | |
| 01/01/12 | 1.022 | 1.025 | | | |
| 09/01/12 | 1.002 | 1.027 | | | |
| | | | | 1.001 | |

### Section I - Factor Adjusting 2009 Policy Year Medical Losses To Present Benefit Level

| Date | (1)<br>Benefit<br>Level<br>Change | (2)<br>Cumulative<br>Index | (3)<br>Weight | (4)<br>Product<br>(2)x(3) | (5)<br>Adj. Factor<br>Present Index/<br>Sum Column (4) |
|---|---|---|---|---|---|
| 09/01/08 | Base | 1.000 | 0.271 | 0.271 | 1.000 |
| 09/01/09 | 1.000 | 1.000 | 0.676 | 0.676 | |
| 09/01/10 | 1.000 | 1.000 | 0.053 | 0.053 | |
| 09/01/11 | 1.000 | 1.000 | | | |
| 01/01/12 | 1.000 | 1.000 | | | |
| 09/01/12 | 1.000 | 1.000 | | | |
| | | | | 1.000 | |

NR  New and renewal business.
*   0.990 = 0.979 / 0.989 = (Targeted Off-balance) / (Off-balance for Policy Year 2009)

**APPENDIX A-I**

**Determination of Policy Year On-level Factors**

**Section J - Premium Adjustment to Average Expected Mod**

| Rating Year | (1)<br>Average<br>Intrastate<br>Mod | (2)<br>Average<br>Interstate<br>Mod | (3)<br>Average Mod<br>Combined<br>Rated Risk | (4)<br>Weighted<br>Average<br>Off-Balance | (5)<br>Average<br>Mod<br>Expected | (6)= (5)/(4)<br>Policy Year<br>Adjustment<br>Factor |
|---|---|---|---|---|---|---|
| 1997 | 0.934 | 0.923 | 0.930 | 0.933 | 0.979 | 1.049 |
| 1998 | 0.955 | 0.927 | 0.946 | 0.949 | 0.979 | 1.032 |
| 1999 | 1.041 | 0.978 | 1.019 | 1.018 | 0.979 | 0.962 |
| 2000 | 1.006 | 0.969 | 0.994 | 0.994 | 0.979 | 0.985 |
| 2001 | 1.010 | 0.998 | 1.006 | 1.006 | 0.979 | 0.973 |
| 2002 | 1.010 | 1.019 | 1.013 | 1.012 | 0.979 | 0.967 |
| 2003 | 1.018 | 1.005 | 1.013 | 1.012 | 0.979 | 0.967 |
| 2004 | 0.991 | 1.008 | 0.997 | 0.997 | 0.979 | 0.982 |
| 2005 | 0.976 | 1.017 | 0.991 | 0.992 | 0.979 | 0.987 |
| 2006 | 0.974 | 0.991 | 0.980 | 0.981 | 0.979 | 0.998 |
| 2007 | 0.985 | 0.991 | 0.987 | 0.988 | 0.979 | 0.991 |
| 2008 | 0.985 | 0.998 | 0.989 | 0.990 | 0.979 | 0.989 |
| 2009 | 0.995 | 0.975 | 0.988 | 0.989 | 0.979 | 0.990 |
| 2010 | 0.992 | 0.982 | 0.988 | 0.989 | 0.979 | 0.990 |
| 2011 | 0.999 | 0.986 | 0.994 | 0.994 | 0.979 | 0.985 |
| 2012 | 0.998 | 0.986 | 0.993 | 0.993 | 0.979 | 0.986 |

**APPENDIX A-II**

**Determination of Premium and Losses Developed to an Ultimate Report**

**Premium and Loss Summary Valued as of 12/31/2012**

**Policy Year 2011**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium | $129,804,790 |
| (2) | Factor to Develop Premium to Ultimate | 0.994 |
| (3) | Standard Earned Premium Developed to Ultimate = (1)x(2) | $129,025,961 |
| (4) | Limited Indemnity Paid Losses | $26,256,226 |
| (5) | Limited Indemnity Paid Development Factor to Ultimate | 2.915 |
| (6) | Limited Indemnity Paid Losses Developed to Ultimate = (4)x(5) | $76,536,899 |
| (7) | Limited Medical Paid Losses | $23,565,470 |
| (8) | Limited Medical Paid Development Factor to Ultimate | 1.633 |
| (9) | Limited Medical Paid Losses Developed to Ultimate = (7)x(8) | $38,482,413 |

**Policy Year 2010**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium | $123,046,642 |
| (2) | Factor to Develop Premium to Ultimate | 1.001 |
| (3) | Standard Earned Premium Developed to Ultimate = (1)x(2) | $123,169,689 |
| (4) | Limited Indemnity Paid Losses | $46,261,665 |
| (5) | Limited Indemnity Paid Development Factor to Ultimate | 1.692 |
| (6) | Limited Indemnity Paid Losses Developed to Ultimate = (4)x(5) | $78,274,737 |
| (7) | Limited Medical Paid Losses | $31,817,493 |
| (8) | Limited Medical Paid Development Factor to Ultimate | 1.264 |
| (9) | Limited Medical Paid Losses Developed to Ultimate = (7)x(8) | $40,217,311 |

**Policy Year 2009**

| | | |
|---|---|---:|
| (1) | Standard Earned Premium | $122,899,382 |
| (2) | Factor to Develop Premium to Ultimate | 1.000 |
| (3) | Standard Earned Premium Developed to Ultimate = (1)x(2) | $122,899,382 |
| (4) | Limited Indemnity Paid Losses | $55,413,872 |
| (5) | Limited Indemnity Paid Development Factor to Ultimate | 1.324 |
| (6) | Limited Indemnity Paid Losses Developed to Ultimate = (4)x(5) | $73,367,967 |
| (7) | Limited Medical Paid Losses | $32,730,998 |
| (8) | Limited Medical Paid Development Factor to Ultimate | 1.161 |
| (9) | Limited Medical Paid Losses Developed to Ultimate = (7)x(8) | $38,000,689 |

**APPENDIX A-II**

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section A - Premium Development Factors**

| Policy Year | 1st/2nd | Policy Year | 2nd/3rd | Policy Year | 3rd/4th | Policy Year | 4th/5th |
|---|---|---|---|---|---|---|---|
| 2008 | 0.984 | 2007 | 1.000 | 2006 | 1.000 | 2005 | 1.000 |
| 2009 | 0.993 | 2008 | 1.000 | 2007 | 1.000 | 2006 | 1.000 |
| 2010 | 1.002 | 2009 | 1.003 | 2008 | 1.001 | 2007 | 1.000 |
| Average | 0.993 | Average | 1.001 | Average | 1.000 | Average | 1.000 |

Summary of Premium Development Factors

| 1st/5th | 2nd/5th | 3rd/5th | 4th/5th |
|---|---|---|---|
| 0.994 | 1.001 | 1.000 | 1.000 |

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section B - Limited Indemnity Paid Loss Development Factors**

| Policy Year | 1st/2nd | Policy Year | 2nd/3rd | Policy Year | 3rd/4th | Policy Year | 4th/5th |
|---|---|---|---|---|---|---|---|
| 2006 | 1.695 | 2005 | 1.268 | 2004 | 1.096 | 2003 | 1.058 |
| 2007 | 1.694 | 2006 | 1.252 | 2005 | 1.101 | 2004 | 1.053 |
| 2008 | 1.757 | 2007 | 1.276 | 2006 | 1.102 | 2005 | 1.038 |
| 2009 | 1.720 | 2008 | 1.290 | 2007 | 1.114 | 2006 | 1.061 |
| 2010 | 1.754 | 2009 | 1.303 | 2008 | 1.128 | 2007 | 1.087 |
| Average* | 1.723 | Average* | 1.278 | Average* | 1.106 | Average* | 1.057 |

| Policy Year | 5th/6th | Policy Year | 6th/7th | Policy Year | 7th/8th | Policy Year | 8th/9th |
|---|---|---|---|---|---|---|---|
| 2002 | 1.029 | 2001 | 1.029 | 2000 | 1.013 | 1999 | 1.011 |
| 2003 | 1.027 | 2002 | 1.021 | 2001 | 1.008 | 2000 | 1.004 |
| 2004 | 1.019 | 2003 | 1.024 | 2002 | 1.007 | 2001 | 1.007 |
| 2005 | 1.021 | 2004 | 1.029 | 2003 | 1.017 | 2002 | 1.008 |
| 2006 | 1.042 | 2005 | 1.019 | 2004 | 1.009 | 2003 | 1.008 |
| Average* | 1.026 | Average* | 1.025 | Average* | 1.010 | Average* | 1.008 |

| Policy Year | 9th/10th | Policy Year | 10th/11th | Policy Year | 11th/12th | Policy Year | 12th/13th |
|---|---|---|---|---|---|---|---|
| 1998 | 1.010 | 1997 | 1.013 | 1996 | 1.005 | 1995 | 1.007 |
| 1999 | 0.999 | 1998 | 1.007 | 1997 | 1.011 | 1996 | 1.004 |
| 2000 | 1.002 | 1999 | 1.007 | 1998 | 1.001 | 1997 | 1.003 |
| 2001 | 1.004 | 2000 | 1.006 | 1999 | 1.009 | 1998 | 1.004 |
| 2002 | 1.003 | 2001 | 1.004 | 2000 | 1.005 | 1999 | 1.008 |
| Average* | 1.003 | Average* | 1.007 | Average* | 1.006 | Average* | 1.005 |

| Policy Year | 13th/14th | Policy Year | 14th/15th | Policy Year | 15th/16th** | Policy Year | 16th/17th** |
|---|---|---|---|---|---|---|---|
| 1994 | 1.004 | 1993 | 1.005 | 1992 | 1.002 | 1991 | 1.002 |
| 1995 | 1.008 | 1994 | 1.004 | 1993 | 1.001 | 1992 | 1.004 |
| 1996 | 1.005 | 1995 | 1.001 | 1994 | 1.007 | 1993 | 1.001 |
| 1997 | 1.001 | 1996 | 1.005 | 1995 | 1.000 | 1994 | 1.003 |
| 1998 | 1.005 | 1997 | 1.003 | 1996 | 1.006 | 1995 | 1.000 |
| Average* | 1.005 | Average* | 1.004 | Average* | 1.003 | Average* | 1.002 |

| Policy Year | 17th/18th** | Policy Year | 18th/19th** |
|---|---|---|---|
| 1990 | 1.002 | 1989 | 1.003 |
| 1991 | 1.003 | 1990 | 1.004 |
| 1992 | 1.001 | 1991 | 1.001 |
| 1993 | 1.001 | 1992 | 1.003 |
| 1994 | 1.006 | 1993 | 1.004 |
| Average* | 1.002 | Average* | 1.003 |

* Excludes the years with the lowest and highest factors.
** For Policy Years 1992 and prior, the development portion of the link ratio was adjusted by a factor of 0.5.
   No adjustment was made for Policy Years 1993 and subsequent.

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section C - Limited Medical Paid Loss Development Factors**

| Policy Year | 1st/2nd | Policy Year | 2nd/3rd | Policy Year | 3rd/4th | Policy Year | 4th/5th |
|---|---|---|---|---|---|---|---|
| 2006 | 1.247 | 2005 | 1.091 | 2004 | 1.027 | 2003 | 1.017 |
| 2007 | 1.297 | 2006 | 1.073 | 2005 | 1.037 | 2004 | 1.010 |
| 2008 | 1.298 | 2007 | 1.091 | 2006 | 1.035 | 2005 | 1.019 |
| 2009 | 1.280 | 2008 | 1.084 | 2007 | 1.050 | 2006 | 1.028 |
| 2010 | 1.318 | 2009 | 1.101 | 2008 | 1.039 | 2007 | 1.014 |
| Average* | 1.292 | Average* | 1.089 | Average* | 1.037 | Average* | 1.017 |

| Policy Year | 5th/6th | Policy Year | 6th/7th | Policy Year | 7th/8th | Policy Year | 8th/9th |
|---|---|---|---|---|---|---|---|
| 2002 | 1.010 | 2001 | 1.004 | 2000 | 1.017 | 1999 | 1.009 |
| 2003 | 1.015 | 2002 | 1.006 | 2001 | 1.007 | 2000 | 1.007 |
| 2004 | 0.998 | 2003 | 1.006 | 2002 | 1.005 | 2001 | 1.007 |
| 2005 | 1.017 | 2004 | 1.000 | 2003 | 1.003 | 2002 | 1.005 |
| 2006 | 1.013 | 2005 | 1.010 | 2004 | 1.002 | 2003 | 1.001 |
| Average* | 1.013 | Average* | 1.005 | Average* | 1.005 | Average* | 1.006 |

| Policy Year | 9th/10th | Policy Year | 10th/11th | Policy Year | 11th/12th | Policy Year | 12th/13th |
|---|---|---|---|---|---|---|---|
| 1998 | 1.002 | 1997 | 1.006 | 1996 | 1.000 | 1995 | 1.002 |
| 1999 | 0.998 | 1998 | 1.004 | 1997 | 1.003 | 1996 | 1.000 |
| 2000 | 1.001 | 1999 | 1.002 | 1998 | 1.003 | 1997 | 1.004 |
| 2001 | 1.005 | 2000 | 1.006 | 1999 | 1.008 | 1998 | 1.002 |
| 2002 | 1.006 | 2001 | 1.003 | 2000 | 1.018 | 1999 | 1.005 |
| Average* | 1.003 | Average* | 1.004 | Average* | 1.005 | Average* | 1.003 |

| Policy Year | 13th/14th | Policy Year | 14th/15th | Policy Year | 15th/16th | Policy Year | 16th/17th |
|---|---|---|---|---|---|---|---|
| 1994 | 1.003 | 1993 | 1.005 | 1992 | 1.002 | 1991 | 1.001 |
| 1995 | 1.008 | 1994 | 1.003 | 1993 | 1.002 | 1992 | 1.002 |
| 1996 | 1.001 | 1995 | 1.006 | 1994 | 1.003 | 1993 | 1.004 |
| 1997 | 1.003 | 1996 | 1.002 | 1995 | 1.004 | 1994 | 1.003 |
| 1998 | 1.001 | 1997 | 1.002 | 1996 | 1.001 | 1995 | 1.004 |
| Average* | 1.002 | Average* | 1.003 | Average* | 1.002 | Average* | 1.003 |

| Policy Year | 17th/18th | Policy Year | 18th/19th |
|---|---|---|---|
| 1990 | 1.001 | 1989 | 1.003 |
| 1991 | 1.004 | 1990 | 1.002 |
| 1992 | 1.001 | 1991 | 1.001 |
| 1993 | 1.006 | 1992 | 1.001 |
| 1994 | 1.005 | 1993 | 1.003 |
| Average* | 1.003 | Average* | 1.002 |

* Excludes the years with the lowest and highest factors.

**APPENDIX A-II**

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section D - 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 |
| 1985 | 99,181,358 | 99,646,049 | 630,586,643 | 630,204,695 | 0.661 | 0.999 |
| 1986 | 125,687,696 | 126,336,934 | 721,066,898 | 720,792,023 | 0.545 | 1.001 |
| 1987 | 146,804,574 | 147,122,331 | 874,425,984 | 876,324,865 | 0.532 | 1.026 |
| 1988 | 154,789,371 | 154,601,219 | 1,030,466,056 | 1,029,990,339 | 0.559 | 0.993 |
| 1989 | 176,705,579 | 177,303,328 | 1,184,591,558 | 1,185,617,205 | 0.528 | 1.014 |
| 1990 | 112,503,976 | 112,790,727 | 1,298,012,630 | 1,298,407,655 | 0.899 | 1.006 |
| 1991 | 85,575,382 | 85,672,605 | 1,409,971,364 | 1,411,320,669 | 1.239 | 1.014 |
| 1992 | 48,966,747 | 49,116,401 | 1,496,937,389 | 1,498,563,425 | 2.215 | 1.018 |

Selected Indemnity 19th-to-Ultimate Loss Development Factor*  1.005

* The development portion of the tail factor was adjusted by a factor of 0.5

**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 |
| 1985 | 26,394,325 | 26,676,091 | 192,526,656 | 193,065,376 | 0.671 | 1.041 |
| 1986 | 31,620,463 | 31,670,926 | 216,546,253 | 215,725,244 | 0.583 | 0.957 |
| 1987 | 36,236,507 | 36,343,911 | 247,396,170 | 248,426,087 | 0.554 | 1.054 |
| 1988 | 40,060,454 | 40,473,027 | 287,528,109 | 288,304,226 | 0.550 | 1.046 |
| 1989 | 46,187,274 | 45,985,799 | 328,777,253 | 331,652,954 | 0.516 | 1.116 |
| 1990 | 33,727,324 | 33,705,992 | 358,959,623 | 359,252,356 | 0.754 | 1.011 |
| 1991 | 30,866,077 | 31,077,089 | 392,573,156 | 395,172,097 | 0.884 | 1.102 |
| 1992 | 20,595,271 | 20,585,164 | 426,208,322 | 426,744,401 | 1.391 | 1.018 |

Selected Medical 19th-to-Ultimate Loss Development Factor  1.043

(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.

**APPENDIX A-II**

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section E - 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 |
|---|---|---|
| 1989 | 0.972 | 0.951 |
| 1990 | 0.988 | 0.982 |
| 1991 | 0.985 | 0.984 |
| 1992 | 0.992 | 0.990 |
| 1993 | 0.989 | 0.971 |
| Average | 0.985 | 0.976 |

\* Policy Years 1992 and prior were adjusted to reflect the 1992 reform.

|  | Indemnity | Medical |
|---|---|---|
| (1) Paid+Case 19th-to-Ultimate Loss Development Factor (Section D) | 1.005 | 1.043 |
| (2) Factor to Adjust 19th-to-Ultimate Development Factor to a Limited Basis | 0.380 | 0.380 |
| (3) Limited Paid+Case 19th-to-Ultimate Loss Development Factor = [(1)-1]x(2)+1 | 1.002 | 1.016 |
| (4) Limited Paid-to-Paid+Case Ratio (Section E) | 0.985 | 0.976 |
| (5) Limited Paid 19th-to-Ultimate Loss Development Factor = (3) / (4) | 1.017 | 1.041 |

**Section F - Summary of Limited Paid Loss Development Factors**

| Report | (1) Indemnity Paid Loss Development to Next Report | (2) Indemnity Paid Loss Development to Ultimate | | Report | (3) Medical Paid Loss Development to Next Report | (4) Medical Paid Loss Development to Ultimate | |
|---|---|---|---|---|---|---|---|
| 1st | 1.723 | 2.915 | | 1st | 1.292 | 1.633 | |
| 2nd | 1.278 | 1.692 | | 2nd | 1.089 | 1.264 | |
| 3rd | 1.106 | 1.324 | | 3rd | 1.037 | 1.161 | |
| 4th | 1.057 | 1.197 | | 4th | 1.017 | 1.120 | |
| 5th | 1.026 | 1.132 | | 5th | 1.013 | 1.101 | |
| 6th | 1.025 | 1.103 | | 6th | 1.005 | 1.087 | |
| 7th | 1.010 | 1.076 | | 7th | 1.005 | 1.082 | |
| 8th | 1.008 | 1.065 | | 8th | 1.006 | 1.077 | |
| 9th | 1.003 | 1.057 | | 9th | 1.003 | 1.071 | |
| 10th | 1.007 | 1.054 | | 10th | 1.004 | 1.068 | |
| 11th | 1.006 | 1.047 | | 11th | 1.005 | 1.064 | |
| 12th | 1.005 | 1.041 | | 12th | 1.003 | 1.059 | |
| 13th | 1.005 | 1.036 | | 13th | 1.002 | 1.056 | |
| 14th | 1.004 | 1.031 | | 14th | 1.003 | 1.054 | |
| 15th | 1.003 | 1.027 | | 15th | 1.002 | 1.051 | |
| 16th | 1.002 | 1.024 | | 16th | 1.003 | 1.049 | |
| 17th | 1.002 | 1.022 | | 17th | 1.003 | 1.046 | |
| 18th | 1.003 | 1.020 | | 18th | 1.002 | 1.043 | |
| 19th |  | 1.017 | Section E | 19th |  | 1.041 | Section E |

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

**APPENDIX A-II**

**Determination of Premium and Losses Developed to an Ultimate Report**

**Section G - Factor to Adjust Limited Losses to an Unlimited Basis**

| | | |
|---|---|---:|
| (1) | Threshold at the Midpoint of the Loss Cost Effective Period* | 3,408,387 |
| (2) | Statewide Excess Ratio for (1) | 0.043 |
| (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))]} | 1.045 |

**Section H - Policy Year Large Loss Limits**

| Experience Year | Policy Year Detrended Limit |
|:---:|:---:|
| 2011 | 3,058,025 |
| 2010 | 3,003,924 |
| 2009 | 2,927,032 |
| 2008 | 2,879,979 |
| 2007 | 2,824,586 |
| 2006 | 2,744,009 |
| 2005 | 2,645,597 |
| 2004 | 2,551,622 |
| 2003 | 2,473,384 |
| 2002 | 2,374,504 |
| 2001 | 2,283,730 |
| 2000 | 2,212,917 |
| 1999 | 2,131,992 |
| 1998 | 2,055,896 |
| 1997 | 1,968,512 |
| 1996 | 1,868,754 |
| 1995 | 1,794,007 |
| 1994 | 1,735,783 |
| 1993 | 1,687,620 |

* July 25, 2015 is the midpoint of the effective period for which the revised loss costs are being proposed.

### Section A - Summary of Policy Year Data

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| | Lost-Time | Indemnity | | Medical | |
| Policy | Claim | Avg Cost | Loss | Avg Cost | Loss |
| Year | Frequency* | Per Case*^ | Ratio^ | Per Case*^ | Ratio^ |
| 1997 | 38.286 | 15,279 | 0.585 | 7,044 | 0.270 |
| 1998 | 36.337 | 15,668 | 0.569 | 6,836 | 0.248 |
| 1999 | 37.370 | 14,652 | 0.547 | 7,097 | 0.265 |
| 2000 | 35.929 | 15,457 | 0.555 | 6,966 | 0.250 |
| 2001 | 34.540 | 16,089 | 0.556 | 7,436 | 0.257 |
| 2002 | 34.416 | 14,565 | 0.502 | 7,314 | 0.252 |
| 2003 | 33.493 | 15,449 | 0.517 | 7,863 | 0.263 |
| 2004 | 31.850 | 15,295 | 0.487 | 8,012 | 0.255 |
| 2005 | 31.248 | 15,576 | 0.487 | 8,437 | 0.264 |
| 2006 | 29.679 | 16,802 | 0.499 | 8,643 | 0.257 |
| 2007 | 28.696 | 18,451 | 0.530 | 9,003 | 0.258 |
| 2008 | 26.713 | 20,567 | 0.549 | 9,906 | 0.265 |
| 2009 | 27.446 | 19,594 | 0.538 | 9,893 | 0.271 |
| 2010 | 29.277 | 19,434 | 0.569 | 9,746 | 0.285 |
| 2011 | 27.413 | 19,609 | 0.538 | 9,705 | 0.266 |

\* Figures have been adjusted to the current wage level.
^ Based on paid losses.

### Section B - Summary of Annual Trend Factors

| | Indemnity | Medical |
|---|---|---|
| (1) Current Approved Annual Loss Ratio Trend Factor | 1.000 | 1.005 |
| (2) Policy Year Loss Ratio Trends | | |
| 8-point Exponential Trend | 1.021 | 1.010 |
| Statistical Trend | 1.010 | 1.011 |
| (3) Selected Annual Loss Ratio Trend Factor | **1.000** | **1.005** |

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

| | Years |
|---|---|
| Policy Year 2009 | 5.617 |
| Policy Year 2010 | 4.617 |
| Policy Year 2011 | 3.617 |

(5) Trend Factor Applied to Experience Year = (3) ^ (4)

| | Indemnity | Medical |
|---|---|---|
| Policy Year 2009 | 1.000 | 1.028 |
| Policy Year 2010 | 1.000 | 1.023 |
| Policy Year 2011 | 1.000 | 1.018 |

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**APPENDIX A-IV**

**Carriers Not Included in Policy Year Experience**

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 particular 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. All carriers writing at least one-tenth of one percent of the Rhode Island workers compensation written premium volume and whose data is not included in this filing are listed below. The listing is separated by year used in the filing's experience period.

**Policy Year 2011**

None

**Policy Year 2010**

None

**Policy Year 2009**

None

**Derivation of Industry Group Differentials**

Industry group differentials are used to more equitably distribute the overall premium level change based on the individual experience of each industry group.

Wage trend adjustments are calculated to account for the change in industry group wages relative to the change in medical losses. The converted indicated losses used to calculate these adjustments are the losses from the Workers Compensation Statistical Plan. These losses are limited to $500,000 for single claim occurrence and $1,500,000 for each multiple claim occurrence. These limited losses are then adjusted to an ultimate unlimited basis through the application of limited development and an expected excess provision, and brought to the proposed experience, law and loss-based expense levels.

The indicated losses, column (8), are the converted indicated losses further adjusted for trend and the change in overall off balance for experience rating; the adjustments are shown in Appendix B-I, Sections A-1 through A-3. The expected losses (13) are at the same proposed level as the indicated losses and contain a change in industry group off balance. An adjustment to convert the proposed expected losses to reflect current relativities (15) is used to calculate the indicated to expected ratio (16). The indicated differential (17) reflects the indicated losses at a proposed level to expected losses with relativities of the current level to correctly distribute the proposed changes on an industry group basis.

In the calculation of the credibility weighted differentials, the ratios of indicated losses to expected losses by industry group (modified by the wage trend adjustments), column (18), are credibility weighted with the statewide ratio. The credibility is based on lost-time claim counts, column (19). The full credibility standard, column (20), is 12,000 lost-time claims for each industry group. Partial credibility is calculated using the square root of the ratio of the actual lost-time claim counts and the number of lost-time claim counts required for full credibility. The statewide credibility weighted ratio (22) is rebalanced using the latest year expected losses to ensure that the overall premium level change is achieved.

**I. Industry Group Wage Trend Adjustment**

| Industry Group | (1) Converted Indicated Indemnity Losses* | (2) Converted Indicated Medical Losses* | (3) Converted Indicated Total Losses* (1)+(2) | (4) QCEW Average Weekly Wage Trend | (5) Wage Trend Differential (4)SW/(4)IG | (6) Medical Loss Wage Trend Adjustment [(1)+(2)x(5)]/(3) | (7) Normalized Medical Loss Wage Trend Adjustment |
|---|---|---|---|---|---|---|---|
| Manufacturing | 97,584,578 | 58,680,274 | 156,264,852 | 1.075 | 0.994 | 0.998 | 0.998 |
| Contracting | 127,922,234 | 70,648,095 | 198,570,329 | 1.069 | 1.000 | 1.000 | 1.000 |
| Off. & Cler. | 73,962,746 | 47,468,394 | 121,431,140 | 1.082 | 0.988 | 0.995 | 0.995 |
| Goods and Srv. | 238,413,439 | 151,919,552 | 390,332,991 | 1.059 | 1.009 | 1.004 | 1.004 |
| Miscellaneous | 96,654,823 | 59,198,814 | 155,853,637 | 1.076 | 0.993 | 0.997 | 0.997 |
| Statewide | 634,537,820 | 387,915,129 | 1,022,452,949 | 1.069 | | 1.000 | |

*These converted indicated losses are prior to the application of trend.

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**APPENDIX A-V**

## II. Indicated and Expected Losses

| Industry Group | (8) Converted Indicated Balanced Losses | (9) Current Ratio of Manual to Standard Premium | (10) Proposed Ratio of Manual to Standard Premium | (11) Latest Year Current Expected Losses | (12) Five Year Current Expected Losses | (13) Five Year Proposed Expected Losses | (14) Current/ Proposed (12)/(13) | (15) Adjustment to Proposed for Current Relativity (14)IG/(14)SW |
|---|---|---|---|---|---|---|---|---|
| Manufacturing | 146,386,672 | 1.049 | 1.043 | 28,631,901 | 149,211,680 | 153,631,106 | 0.971 | 1.000 |
| Contracting | 185,698,624 | 1.091 | 1.091 | 30,442,477 | 179,266,594 | 184,578,892 | 0.971 | 1.000 |
| Off. & Cler. | 113,736,886 | 1.057 | 1.070 | 24,076,384 | 114,186,134 | 117,567,025 | 0.971 | 1.000 |
| Goods and Srv. | 366,063,294 | 0.992 | 0.993 | 71,899,621 | 348,317,947 | 358,626,192 | 0.971 | 1.000 |
| Miscellaneous | 145,980,038 | 1.038 | 1.039 | 28,022,769 | 140,161,357 | 144,313,453 | 0.971 | 1.000 |
| Statewide | 957,865,514 | | | 183,073,152 | 931,143,712 | 958,716,668 | 0.971 | |

## III. Industry Group Differentials

| Industry Group | (16) Indicated/Expected Ratio (8)/[(13)x(15)] | (17) Indicated Differential (w/o Wage Trend) (16)IG/(16)SW | (18) Indicated/ Expected Ratio (w/ Wage Trend) (7)x(16) | (19) Lost-Time Claim Counts | (20) Full Credibility Standard for Lost-Time Claim Counts | (21) Credibility Minimum of 1.000 and ((19)/(20))^0.5 | (22) Credibility Weighted Indicated/ Expected Ratio | (23) Normalized Credibility Weighted Indicated/ Expected Ratio (22)IG/(22)SW* | (24) Final Industry Group Differential |
|---|---|---|---|---|---|---|---|---|---|
| Manufacturing | 0.953 | 0.954 | 0.951 | 4,330 | 12,000 | 0.60 | 0.970 | 0.966 | 0.966 |
| Contracting | 1.006 | 1.007 | 1.006 | 2,984 | 12,000 | 0.50 | 1.003 | 0.999 | 0.999 |
| Off. & Cler. | 0.967 | 0.968 | 0.962 | 2,885 | 12,000 | 0.49 | 0.981 | 0.977 | 0.977 |
| Goods and Srv. | 1.021 | 1.022 | 1.025 | 12,906 | 12,000 | 1.00 | 1.025 | 1.021 | 1.021 |
| Miscellaneous | 1.012 | 1.013 | 1.009 | 3,722 | 12,000 | 0.56 | 1.005 | 1.001 | 1.001 |
| Statewide | 0.999 | | 0.999 | | | | 1.004 | | 1.000 |

*Statewide ratio (column 22) = $\Sigma_{IG}((11) \times (22)) \div \Sigma_{IG}(11)$

## Distribution of Pure Premium Level Change to Occupational Classification

After determining the required changes in pure premium level overall 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 |
| 1/06-12/06 | 1.086 | 1.017 | 1.181 | 1.014 |
| 1/07-12/07 | 1.122 | 1.029 | 1.206 | 1.011 |
| 1/08-12/08 | 1.168 | 1.061 | 1.213 | 1.012 |
| 1/09-12/09 | 1.316 | 1.121 | 1.225 | 1.006 |
| 1/10-12/10 | 1.935 | 1.405 | 1.324 | 0.997 |

2. **Factors to Adjust to the Proposed Trend Level**

The proposed trend factors are applied to adjust the indicated pure premiums to the proposed level.

| Policy Period | Indemnity | Medical |
|---|---|---|
| 1/06-12/06 | 1.000 | 1.044 |
| 1/07-12/07 | 1.000 | 1.039 |
| 1/08-12/08 | 1.000 | 1.034 |
| 1/09-12/09 | 1.000 | 1.028 |
| 1/10-12/10 | 1.000 | 1.023 |

3. **Factors to Adjust to the September 1, 2013 Benefit Level**

The factors in the following table are applied to adjust the statistical plan losses to the proposed benefit level.

| Policy Period | Fatal | Permanent Total (P.T.) | Permanent Partial (P.P.) | Temporary Total (T.T.) | Medical |
|---|---|---|---|---|---|
| 1/06-12/06 | 1.022 | 1.021 | 1.040 | 1.022 | 1.000 |
| 1/07-12/07 | 1.016 | 1.016 | 1.039 | 1.016 | 1.000 |
| 1/08-12/08 | 1.013 | 1.013 | 1.038 | 1.013 | 1.000 |
| 1/09-12/09 | 1.010 | 1.011 | 1.037 | 1.010 | 1.000 |
| 1/10-12/10 | 1.008 | 1.009 | 1.037 | 1.008 | 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 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) |
|---|---|---|---|---|---|---|---|---|---|
| 1/06-12/06 | 1.110 | 1.039 | 1.109 | 1.129 | 1.058 | 1.110 | 1.039 | 1.233 | 1.059 |
| 1/07-12/07 | 1.140 | 1.045 | 1.140 | 1.166 | 1.069 | 1.140 | 1.045 | 1.253 | 1.050 |
| 1/08-12/08 | 1.183 | 1.075 | 1.183 | 1.212 | 1.101 | 1.183 | 1.075 | 1.254 | 1.046 |
| 1/09-12/09 | 1.329 | 1.132 | 1.330 | 1.365 | 1.162 | 1.329 | 1.132 | 1.259 | 1.034 |
| 1/10-12/10 | 1.950 | 1.416 | 1.952 | 2.007 | 1.457 | 1.950 | 1.416 | 1.354 | 1.020 |

* 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)<br>Excess Ratios | 0.093 | 0.115 | 0.135 | 0.152 | 0.179 | 0.221 | 0.282 |
| (2)<br>Excess Factors 1/(1-(1)) | 1.103 | 1.131 | 1.156 | 1.180 | 1.218 | 1.283 | 1.393 |

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

### 1. Factors to Adjust for Proposed Industry Group Differentials

The following factors are applied to adjust the indicated industry group differentials for normalized wage trend, the effect of credibility weighting of 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* | 0.954 | 1.007 | 0.968 | 1.022 | 1.013 |
| (2) Final Differentials** | 0.966 | 0.999 | 0.977 | 1.021 | 1.001 |
| (3) Adjustment (2)/(1) | 1.013 | 0.992 | 1.009 | 0.999 | 0.988 |

*See Appendix A-V, column (17).
**See Appendix A-V, column (24).

### 2. Factors to Balance Indicated to Expected Losses

The expected losses are calculated as the pure premium underlying the current loss costs, 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) |
|---|---|---|---|---|---|
| 1/06-12/06 | 0.951 | 1.038 | 1.046 | 0.992 | 0.943 |
| 1/07-12/07 | 0.908 | 1.036 | 1.039 | 0.997 | 0.905 |
| 1/08-12/08 | 0.901 | 1.035 | 1.037 | 0.998 | 0.899 |
| 1/09-12/09 | 0.931 | 1.034 | 1.032 | 1.002 | 0.933 |
| 1/10-12/10 | 0.952 | 1.033 | 1.030 | 1.003 | 0.955 |

### 3. Adjustment for Experience Change

A factor of 1.025 is applied to adjust for the experience change in the proposed loss cost level.

### 4. Factor to Reflect the Proposed Loss Adjustment Expense

A factor of 1.187 is applied to include the proposed loss adjustment expense.

### 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 |
|---|---|---|---|---|---|
| 1/06-12/06 | 1.162 | 1.138 | 1.158 | 1.146 | 1.134 |
| 1/07-12/07 | 1.115 | 1.092 | 1.111 | 1.100 | 1.088 |
| 1/08-12/08 | 1.108 | 1.085 | 1.104 | 1.093 | 1.081 |
| 1/09-12/09 | 1.150 | 1.126 | 1.145 | 1.134 | 1.122 |
| 1/10-12/10 | 1.177 | 1.153 | 1.172 | 1.161 | 1.148 |

## Section B – Calculation of Present on Rate Level Pure Premiums

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

### 1. Adjustment for Experience Change

A factor of 1.025 is applied to adjust for the experience change in the proposed loss cost level.

### 2. Factors to Adjust to the Proposed Trend Level

The pure premiums underlying current loss costs contain the current trend. The change in trend factors, 1.000 and 1.000 for indemnity and medical, respectively, are applied to adjust to the proposed trend level.

### 3. Factors to Adjust to the September 1, 2013 Benefit Level

The pure premiums underlying current loss costs are at the current September 1, 2012 level. The following factors are applied to adjust to the proposed benefit level.

| Effective Date | Indemnity | Medical |
|---|---|---|
| September 1, 2013 | 1.001 | 1.000 |

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

The pure premiums underlying current loss costs include the current loss adjustment expense and must be adjusted to the proposed level.

| | (a) Current | | (b) Proposed | |
|---|---|---|---|---|
| | Indemnity | Medical | Indemnity | Medical |
| (1) Loss Adjustment Expense | 1.182 | 1.182 | 1.187 | 1.187 |
| (2) Overall Change (1b)/(1a) | | | 1.004 | 1.004 |

### 5. Adjustment to Obtain Expected Losses

The pure premiums underlying current loss costs reflect the current off-balance for the Experience Rating Plan. 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 | 1.049 | 1.043 | 1.006 |
| Contracting | 1.091 | 1.091 | 1.000 |
| Office & Clerical | 1.057 | 1.070 | 0.988 |
| Goods & Services | 0.992 | 0.993 | 0.999 |
| Miscellaneous | 1.038 | 1.039 | 0.999 |

## 6.  Factors to Adjust for Proposed Industry Group Differentials

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

| Industry Group | (1)<br>Final<br>Differential* | (2)<br>Adjustment to Proposed for<br>Current Relativities** | (3)<br>Adjusted Differential<br>(1)x(2) |
|---|---|---|---|
| Manufacturing | 0.966 | 1.000 | 0.966 |
| Contracting | 0.999 | 1.000 | 0.999 |
| Office & Clerical | 0.977 | 1.000 | 0.977 |
| Goods & Services | 1.021 | 1.000 | 1.021 |
| Miscellaneous | 1.001 | 1.000 | 1.001 |

*See Appendix A-V, column (24).
**See Appendix A-V, column (15).

## 7.  Combined Conversion Factors

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

| Industry Group | Indemnity | Medical |
|---|---|---|
| Manufacturing | 1.001 | 1.000 |
| Contracting | 1.029 | 1.028 |
| Office & Clerical | 0.994 | 0.993 |
| Goods & Services | 1.051 | 1.050 |
| Miscellaneous | 1.030 | 1.029 |

## 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 Rhode Island conditions in four steps. First, statewide indicated pure premiums are determined for Rhode Island. Second, using Rhode Island payrolls as weights, corresponding statewide average pure premiums are computed for each remaining state. Third, the ratios of Rhode Island 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 Rhode Island 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 loss costs.

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: $18,657,486 for indemnity, and $5,527,910 for medical.

The partial credibilities formula is:

$$z = [ \text{(expected losses)} / \text{(full credibility standard)} ]^{0.4}$$

For the national pure premiums, credibility is determined from the number of lost-time claims. Full credibility standards are: 1,150 lost-time claims for indemnity; and 1,000 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 = the smaller of
$[ \text{(national cases)} / \text{(full credibility standard)} ]^{0.4}$ and $[ (1 - \text{state credibility}) / 2 ]$

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.

## Adjustments to Pure Premiums to Obtain Advisory Loss Costs

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

### 1. Test Correction Factor

The payrolls are now extended by the advisory loss costs presently in effect and by the indicated advisory loss costs 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 advisory loss costs 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 | 1.0026 |
| Contracting | 1.0019 |
| Office & Clerical | 1.0338 |
| Goods & Services | 1.0065 |
| Miscellaneous | 1.0000 |

### 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 | 1.043 |
| Contracting | 1.091 |
| Office & Clerical | 1.070 |
| Goods & Services | 0.993 |
| Miscellaneous | 1.039 |

### 3. Disease Loadings

The proposed manual advisory loss costs 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.

## 4. Swing Limits

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

| | |
|---|---|
| Manufacturing | from 15% above to 15% below |
| Contracting | from 18% above to 12% below |
| Office & Clerical | from 16% above to 14% below |
| Goods & Services | from 20% above to 10% below |
| Miscellaneous | from 18% above to 12% below |

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

Max. Deviation = Effect of the final change in premium level by industry group plus or minus 15% rounded to the nearest 1%.

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

An illustrative example showing the calculation of a proposed manual class advisory loss cost 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 advisory loss costs for other classifications are calculated in the same manner.

List of Classifications Limited by Upper Swing

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0034 | 0106 | 1438 | 1748 | 2070 | 2105 | 2501 | 2585 |
| 2623 | 2701 | 2841 | 3113 | 3175 | 3180 | 3270 | 3336 |
| 3372 | 3507 | 4670 | 4692 | 4741 | 5040 | 5472 | 6003 |
| 6251 | 6811 | 7230 | 7232 | 7390 | 7520 | 8006 | 8203 |
| 8291 | 8721 | 8725 | 8748 | 8803 | 8842 | 9012 | 9019 |
| 9058 | 9089 | 9156 | 9170 | 9410 | 9516 | | |

List of Classifications Limited by Lower Swing

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1701 | 2081 | 2111 | 2402 | 2683 | 3064 | 3131 | 3365 |
| 3726 | 4034 | 4114 | 4130 | 4304 | 4410 | 4581 | 4686 |
| 4923 | 5020 | 5037 | 5057 | 5059 | 6252 | 7394 | 7395 |
| 7398 | 7431 | 7453 | 7605 | 8047 | 8106 | 8227 | 8233 |
| 8500 | 8799 | 8871 | 8901 | 9178 | | | |

**Determination of Rating Values on Miscellaneous Values Page**

A.  Current and Proposed Miscellaneous Values are calculated based on formulas, dependent on the State Average Weekly Wage (SAWW).

|  | Current | Proposed | Change |
|---|---|---|---|
| 1) State Average Weekly Wage (SAWW) | $864.81 [1] | $883.63 [2] | 2.2% |
| 2) Basis of premium applicable in accordance with the *Basic Manual* footnote instructions for Code 7370 -- "Taxicab Co.": | | | |
| Employee operated vehicle [3] | $67,500 | $69,000 | 2.2% |
| Leased or rented vehicle [4] | $45,000 | $46,000 | 2.2% |
| 3) Maximum Payroll applicable in accordance with the *Basic Manual* footnote instructions for Code 9178 -- "Athletic Sports or Park:  Non-Contact Sports", and Code 9179 -- "Athletic Sports or Park:  Contact Sports" [5] | $3,500 | $3,500 | 0.0% |
| 4) Maximum Payroll applicable in accordance with  *Basic Manual* Rule 2-E-1 -- "Executive Officers" [6] | $3,500 | $3,500 | 0.0% |
| 5) Minimum Payroll applicable in accordance with *Basic Manual* Rule 2-E-1 -- "Executive Officers" [7] | $850 | $900 | 5.9% |
| 6) Per Passenger Seat Surcharge - In accordance with the *Basic Manual* footnote instructions for classification Code 7421, the surcharge is: | | | |
| Maximum surcharge per aircraft [8] | $1,000 | $1,000 | 0.0% |
| Per passenger seat [9] | $100 | $100 | 0.0% |

[1]  State Average Weekly Wage.  Effective September 1, 2012.
[2]  State Average Weekly Wage.  Effective September 1, 2013.
[3]  Underlying formula is: SAWW x 52 x 1.5 (Rounded to the nearest $100), Item B-1422.
[4]  Underlying formula is: SAWW x 52 (Rounded to the nearest $100), Item B-1422.
[5]  Underlying formula is: SAWW x 4  (Rounded to the nearest $100), Item B-1422.
[6]  Underlying formula is: SAWW x 4  (Rounded to the nearest $100), Item B-1420
[7]  Underlying formula is: SAWW (Rounded to the nearest $50), Item B-1420.
[8]  Amount is capped at $1000.
[9]  Amount is capped at $100.

B.  Loss Elimination Ratios (LERs) continue to be determined using the standard methodology described in the literature (e.g. Gillam,W.R.; and Snader, R.H., "Fundamentals of Individual Risk Rating," 1992, and  Rollins, J.; and Washburn,M.J., "A Quantification of Snader's Deductible Safety Factor," 1994). The updated values reflect the experience, trend and development consistent with the ELPPFs filed in Item R-1406.

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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 1,102,794 | 1,552,824 | 704,435 | 551,824 | 596,515 | 1,206,386 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 1,042,805 | 971,035 | 273,700 | 1,284,726 | 596,887 | 1,485,123 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 1,450,589 | 1,898,339 | 328,927 | 529,446 | 641,064 | 1,569,434 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 409,197 | 1,391,234 | 241,130 | 1,020,290 | 320,580 | 1,445,372 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 547,185 | 486,190 | 194,267 | 1,426,834 | 591,870 | 1,999,536 |

**PRIMARY PARTIAL 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 1.110 | 1.039 | 1.109 | 1.129 | 1.058 | 1.110 | 1.039 | 1.233 | 1.059 |
| 01/01/07 - 12/31/07 | 1.140 | 1.045 | 1.140 | 1.166 | 1.069 | 1.140 | 1.045 | 1.253 | 1.050 |
| 01/01/08 - 12/31/08 | 1.183 | 1.075 | 1.183 | 1.212 | 1.101 | 1.183 | 1.075 | 1.254 | 1.046 |
| 01/01/09 - 12/31/09 | 1.329 | 1.132 | 1.330 | 1.365 | 1.162 | 1.329 | 1.132 | 1.259 | 1.034 |
| 01/01/10 - 12/31/10 | 1.950 | 1.416 | 1.952 | 2.007 | 1.457 | 1.950 | 1.416 | 1.354 | 1.020 |

**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 | 1.156 |

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% |
|---|---|

# RHODE ISLAND
## APPENDIX B-III

DERIVATION OF PROPOSED ADVISORY LOSS COST - CODE 8810

**EXPECTED UNLIMITED LOSSES (Limited Losses x Primary Conversion Factors, then adjusted for 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 1,361,725 | 1,796,839 | 855,195 | 627,072 | 977,002 | 1,615,544 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 1,329,851 | 1,135,308 | 341,257 | 1,468,345 | 960,157 | 1,951,641 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 1,922,863 | 2,285,927 | 425,585 | 622,488 | 1,063,588 | 2,064,142 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 610,895 | 1,768,103 | 350,492 | 1,263,197 | 521,560 | 1,901,073 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 1,201,110 | 774,759 | 414,319 | 2,209,723 | 1,018,825 | 2,528,530 |

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

| Policy Period | INDUSTRY GROUP: Office and Clerical |
|---|---|
| 01/01/06 - 12/31/06 | 1.158 |
| 01/01/07 - 12/31/07 | 1.111 |
| 01/01/08 - 12/31/08 | 1.104 |
| 01/01/09 - 12/31/09 | 1.145 |
| 01/01/10 - 12/31/10 | 1.172 |

**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 |
|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 4,155,284,028 | 2,567,193 | 2,806,889 | 1,131,368 | 1,870,800 | 5,374,082 | 3,002,168 | 8,376,250 |
| 01/01/07 - 12/31/07 | 4,515,975,985 | 1,856,601 | 2,892,658 | 1,066,734 | 2,168,273 | 4,749,259 | 3,235,007 | 7,984,266 |
| 01/01/08 - 12/31/08 | 4,606,342,439 | 2,592,687 | 3,210,890 | 1,174,201 | 2,278,813 | 5,803,577 | 3,453,014 | 9,256,591 |
| 01/01/09 - 12/31/09 | 4,532,117,900 | 1,100,788 | 3,470,839 | 597,186 | 2,176,729 | 4,571,627 | 2,773,915 | 7,345,542 |
| 01/01/10 - 12/31/10 | 4,801,408,565 | 1,893,283 | 3,497,813 | 1,194,063 | 2,963,437 | 5,391,096 | 4,157,500 | 9,548,596 |
| Total | 22,611,128,917 | 10,010,552 | 15,879,089 | 5,163,552 | 11,458,052 | 25,889,641 | 16,621,604 | 42,511,245 |
| | **INDICATED PURE PREMIUM** | | | | | **0.114** | **0.074** | **0.19** |

The present on rate level pure premiums are developed by adjusting the pure premiums underlying the current loss cost 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 Loss Cost | 0.132 | 0.078 | 0.21 |
| Conversion Factors (App. B-I, section B) | 0.994 | 0.993 | xxx |
| **PURE PREMIUMS PRESENT ON RATE LEVEL** **(Underlying Pure Premiums) x (Conversion Factor)** | 0.131 | 0.077 | 0.21 |

# RHODE ISLAND
## APPENDIX B-III

DERIVATION OF PROPOSED ADVISORY LOSS COST - CODE 8810
Industry Group - Office and Clerical.  Hazard Group - C.

The loss cost for the above captioned classification is then derived as shown in the following exhibit:

|  |  | Indemnity | Medical | Total |
|---|---|---|---|---|
| 1. | Indicated Pure Premium | 0.114 | 0.074 | 0.19 |
| 2. | Pure Premium Indicated by National Relativity | 0.106 | 0.075 | 0.18 |
| 3. | Pure Premium Present on Rate Level | 0.131 | 0.077 | 0.21 |
| 4. | State Credibilities | 100% | 100% | xxx |
| 5. | National Credibilities | 0% | 0% | xxx |
| 6. | Residual Credibilities = 100% - (4) - (5) | 0% | 0% | xxx |
| 7. | Derived by Formula Pure Premiums = (1) x (4) + (2) x (5) + (3) x (6) | 0.114 | 0.074 | 0.19 |
| 8. | Test Correction Factor | 1.0338 | 1.0338 | xxx |
| 9. | Underlying Pure Premiums = (7) x (8) * | 0.123 | 0.077 | 0.20 |
| 10. | Ratio of Manual to Standard Premium |  |  | 1.070 |
| 11. | Loss Cost = (9) x (10) |  |  | 0.21 |
| 12. | Loss Cost Within Swing Limits |  |  | 0.21 |
|  | Current Loss Cost x Swing Limits<br>a) Lower bound = 0.22 x 0.860 = 0.19<br>b) Upper bound = 0.22 x 1.160 = 0.25 |  |  |  |
| 13. | Pure Premiums Underlying Proposed Loss Cost* = ((13TOT) / (9TOT)) x (9) , (13TOT) = (12) / (10) | 0.123 | 0.077 | 0.20 |
| 14. | Disease, Catastrophe and/or Miscellaneous Loadings |  |  | 0.00 |
| 15. | Final Loaded Loss Cost |  |  | 0.21 |

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

# 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 loss costs. The payrolls are extended by the loss costs presently in effect and the indicated loss costs. The loss costs are then limited to the swing limits based on 15% above and 15% below the current loss costs, which results in the indicated loss cost level change of +5.9%.

## 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.

### A-1 Calculation of Primary Conversion Factors

### 1. Factors to Adjust to the Proposed Benefit Levels

The state losses are adjusted to the September 1, 2013 state law level. The federal losses are adjusted to the October 1, 2012 federal law level.

STATE ACT

| Policy Period | Fatal | Permanent Total (P.T.) | Permanent Partial (P.P.) | Temporary Total (T.T.) | Medical |
|---|---|---|---|---|---|
| 1/06 - 12/06 | 1.022 | 1.021 | 1.040 | 1.022 | 1.000 |
| 1/07 - 12/07 | 1.016 | 1.016 | 1.039 | 1.016 | 1.000 |
| 1/08 - 12/08 | 1.013 | 1.013 | 1.038 | 1.013 | 1.000 |
| 1/09 - 12/09 | 1.010 | 1.011 | 1.037 | 1.010 | 1.000 |
| 1/10 - 12/10 | 1.008 | 1.009 | 1.037 | 1.008 | 1.000 |

FEDERAL ACT

| Policy Period | Fatal | Permanent Total (P.T.) | Permanent Partial (P.P.) | Temporary Total (T.T.) | Medical |
|---|---|---|---|---|---|
| 1/06 - 12/06 | 1.045 | 1.028 | 1.007 | 1.028 | 1.000 |
| 1/07 - 12/07 | 1.037 | 1.024 | 1.006 | 1.024 | 1.000 |
| 1/08 - 12/08 | 1.027 | 1.018 | 1.005 | 1.018 | 1.000 |
| 1/09 - 12/09 | 1.017 | 1.013 | 1.004 | 1.013 | 1.000 |
| 1/10 - 12/10 | 1.013 | 1.010 | 1.004 | 1.010 | 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 1.000 and 1.005 for indemnity and medical, respectively.

| Policy Period | Indemnity | Medical |
|---|---|---|
| 1/06 - 12/06 | 1.000 | 1.044 |
| 1/07 - 12/07 | 1.000 | 1.039 |
| 1/08 - 12/08 | 1.000 | 1.034 |
| 1/09 - 12/09 | 1.000 | 1.028 |
| 1/10 - 12/10 | 1.000 | 1.023 |

## 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 |
| 1/06 - 12/06 | 1.130 | 1.012 | 1.278 | 1.029 |
| 1/07 - 12/07 | 1.189 | 1.039 | 1.321 | 1.030 |
| 1/08 - 12/08 | 1.309 | 1.115 | 1.387 | 1.040 |
| 1/09 - 12/09 | 1.577 | 1.267 | 1.483 | 1.065 |
| 1/10 - 12/10 | 2.952 | 1.731 | 1.777 | 1.134 |

### 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 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) |
|---|---|---|---|---|---|---|---|---|---|
| 1/06 - 12/06 | 1.155 | 1.034 | 1.154 | 1.175 | 1.052 | 1.155 | 1.034 | 1.334 | 1.074 |
| 1/07 - 12/07 | 1.208 | 1.056 | 1.208 | 1.235 | 1.080 | 1.208 | 1.056 | 1.373 | 1.070 |
| 1/08 - 12/08 | 1.326 | 1.129 | 1.326 | 1.359 | 1.157 | 1.326 | 1.129 | 1.434 | 1.075 |
| 1/09 - 12/09 | 1.593 | 1.280 | 1.594 | 1.635 | 1.314 | 1.593 | 1.280 | 1.525 | 1.095 |
| 1/10 - 12/10 | 2.976 | 1.745 | 2.979 | 3.061 | 1.795 | 2.976 | 1.745 | 1.818 | 1.160 |

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) |
|---|---|---|---|---|---|---|---|---|---|
| 1/06 - 12/06 | 1.181 | 1.058 | 1.162 | 1.138 | 1.019 | 1.162 | 1.040 | 1.334 | 1.074 |
| 1/07 - 12/07 | 1.233 | 1.077 | 1.218 | 1.196 | 1.045 | 1.218 | 1.064 | 1.373 | 1.070 |
| 1/08 - 12/08 | 1.344 | 1.145 | 1.333 | 1.316 | 1.121 | 1.333 | 1.135 | 1.434 | 1.075 |
| 1/09 - 12/09 | 1.604 | 1.289 | 1.598 | 1.583 | 1.272 | 1.598 | 1.283 | 1.525 | 1.095 |
| 1/10 - 12/10 | 2.990 | 1.754 | 2.982 | 2.964 | 1.738 | 2.982 | 1.748 | 1.818 | 1.160 |

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

## A-2 – Expected Excess Provision and Redistribution

To reduce distortions in individual class loss cost indications, individual claim amounts are subject to a maximum limit of $500,000. Multiple claims 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 | 0.093 | 0.115 | 0.135 | 0.152 | 0.179 | 0.221 | 0.282 |
| (2) Excess Factors 1/(1-(1)) | 1.103 | 1.131 | 1.156 | 1.180 | 1.218 | 1.283 | 1.393 |

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.

## 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 state assessment and loss adjustment expense. 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 |
|---|---|---|
| 1/06 - 12/06 | 1.187 | 1.187 |
| 1/07 - 12/07 | 1.187 | 1.260 |
| 1/08 - 12/08 | 1.187 | 1.250 |
| 1/09 - 12/09 | 1.187 | 1.282 |
| 1/10 - 12/10 | 1.187 | 1.187 |

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

## B – Present On Rate Level

### 1. Benefits

The current underlying pure premiums are at the current September 1, 2012 state and October 1, 2011 federal law levels. These pure premiums are adjusted to reflect the weighted effect of state and federal laws which bring losses to the proposed September 1, 2013 state and October 1, 2012 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%) | 0.085 |
|---|---|
| Federal Weight (Fed%) | 0.915 |

| | Indemnity | Medical | Total |
|---|---|---|---|
| (a) State Laws | 1.001 | 1.000 | 1.001 |
| (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 |
|---|---|
| 1.000 | 1.006 |

# 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 | 1.187 | 1.187 | 1.187 |
| (b) Loss-Based Assessment | 1.000 | 1.000 | 1.000 |
| (c) Total = (a) + (b) – 1 | 1.187 | 1.187 | 1.187 |

FEDERAL ACT

| | Indemnity | Medical | Total |
|---|---|---|---|
| (d) Loss Adjustment Expense | 1.187 | 1.187 | 1.187 |
| (e) Loss-Based Assessment | 1.151 | 1.000 | 1.081 |
| (f) Total = (d) + (e) - 1 | 1.338 | 1.187 | 1.268 |

| | Indemnity | Medical | Total |
|---|---|---|---|
| (g) Weighted Proposed Expenses = [(c) x St%] + [(f) x Fed%] | 1.325 | 1.187 | 1.261 |

Current:

STATE

| | Indemnity | Medical | Total |
|---|---|---|---|
| (h) Loss Adjustment Expense | 1.182 | 1.182 | 1.182 |
| (i) Loss-Based Assessment | 1.000 | 1.000 | 1.000 |
| (j) Total = (h) + (i) - 1 | 1.182 | 1.182 | 1.182 |

FEDERAL

| | Indemnity | Medical | Total |
|---|---|---|---|
| (k) Loss Adjustment Expense | 1.182 | 1.182 | 1.182 |
| (l) Loss-Based Assessment | 1.160 | 1.000 | 1.079 |
| (m) Total = (k) + (l) - 1 | 1.342 | 1.182 | 1.261 |

| | Indemnity | Medical | Total |
|---|---|---|---|
| (n) Weighted Current Expenses = [(j) x St%] + [(m) x Fed%] | 1.328 | 1.182 | 1.254 |

Change:

| | Indemnity | Medical | Total |
|---|---|---|---|
| Weighted Expense Change in Loss-Based Expenses = [(g) / (n)] | 0.998 | 1.004 | 1.006 |

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

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

| Indemnity | Medical |
|---|---|
| 1.001 | 1.010 |

## 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 A, B and C but using the non-appropriated benefit changes and the federal loss-based expenses.

## 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: $62,136,700 for indemnity, and $25,756,000 for medical.

## II. Calculation of Proposed Loss Costs

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

**A. Test Correction Factor**            1.0000

**B. Ratio of Manual Premium to Earned Premium**      1.064
(Selected based on Rhode Island off-balance analysis)

**C. Swing Limits**

The classifications which were adjusted by swing limits are as follows:

List of Classifications Limited by Upper Swing:       List of Classifications Limited by Lower Swing:
6872   7309   7327   9077                              None

# RHODE ISLAND
## APPENDIX B-IV

### DERIVATION OF PROPOSED ADVISORY LOSS COST - CODE 6824

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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 1,000 | 0 | 0 | 34,105 | 0 | 25,156 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 0 | 47,615 | 0 | 72,121 | 0 | 99,758 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 0 | 0 | 0 | 10,453 | 0 | 34,801 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 0 | 0 | 0 | 27,321 | 0 | 57,779 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 0 | 154,168 | 33,623 | 76,504 | 19,979 | 166,853 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 215 |

**STATE ACT - PRIMARY PARTIAL 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 1.155 | 1.034 | 1.154 | 1.175 | 1.052 | 1.155 | 1.034 | 1.334 | 1.074 |
| 01/01/07 - 12/31/07 | 1.208 | 1.056 | 1.208 | 1.235 | 1.080 | 1.208 | 1.056 | 1.373 | 1.070 |
| 01/01/08 - 12/31/08 | 1.326 | 1.129 | 1.326 | 1.359 | 1.157 | 1.326 | 1.129 | 1.434 | 1.075 |
| 01/01/09 - 12/31/09 | 1.593 | 1.280 | 1.594 | 1.635 | 1.314 | 1.593 | 1.280 | 1.525 | 1.095 |
| 01/01/10 - 12/31/10 | 2.976 | 1.745 | 2.979 | 3.061 | 1.795 | 2.976 | 1.745 | 1.818 | 1.160 |

**FEDERAL ACT - PRIMARY PARTIAL 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 1.181 | 1.058 | 1.162 | 1.138 | 1.019 | 1.162 | 1.040 | 1.334 | 1.074 |
| 01/01/07 - 12/31/07 | 1.233 | 1.077 | 1.218 | 1.196 | 1.045 | 1.218 | 1.064 | 1.373 | 1.070 |
| 01/01/08 - 12/31/08 | 1.344 | 1.145 | 1.333 | 1.316 | 1.121 | 1.333 | 1.135 | 1.434 | 1.075 |
| 01/01/09 - 12/31/09 | 1.604 | 1.289 | 1.598 | 1.583 | 1.272 | 1.598 | 1.283 | 1.525 | 1.095 |
| 01/01/10 - 12/31/10 | 2.990 | 1.754 | 2.982 | 2.964 | 1.738 | 2.982 | 1.748 | 1.818 | 1.160 |

DERIVATION OF PROPOSED ADVISORY LOSS COST - CODE 6824

**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: F |
|---|---|
| Excess Factor | 1.283 |

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 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 1,508 | 0 | 0 | 41,258 | 0 | 38,667 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 0 | 60,164 | 0 | 89,103 | 0 | 151,430 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 0 | 0 | 0 | 13,807 | 0 | 49,345 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 0 | 0 | 0 | 40,914 | 0 | 85,150 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 0 | 323,762 | 117,067 | 156,187 | 57,947 | 294,849 |

**FEDERAL ACT - EXPECTED UNLIM LOSSES (Lim Losses x Primary Conv Factors, then adjusted for 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 |
|---|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/07 - 12/31/07 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/08 - 12/31/08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/09 - 12/31/09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/01/10 - 12/31/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 320 |

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

| Policy Period | INDUSTRY GROUP: F-Class |
|---|---|
| 01/01/06 - 12/31/06 | 1.187 |
| 01/01/07 - 12/31/07 | 1.187 |
| 01/01/08 - 12/31/08 | 1.187 |
| 01/01/09 - 12/31/09 | 1.187 |
| 01/01/10 - 12/31/10 | 1.187 |

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

| Policy Period | INDUSTRY GROUP: F-Class |
|---|---|
| 01/01/06 - 12/31/06 | 1.187 |
| 01/01/07 - 12/31/07 | 1.260 |
| 01/01/08 - 12/31/08 | 1.250 |
| 01/01/09 - 12/31/09 | 1.282 |
| 01/01/10 - 12/31/10 | 1.187 |

**TOTAL - PAYROLL, FINAL CONVERTED LOSSES**

| Policy Period | Payroll | Indemnity Likely | Indemnity Not-Likely | Medical Likely | Medical Not-Likely | Total Indemnity | Total Medical | Total |
|---|---|---|---|---|---|---|---|---|
| 01/01/06 - 12/31/06 | 4,310,984 | 1,790 | 48,973 | 0 | 45,898 | 50,763 | 45,898 | 96,661 |
| 01/01/07 - 12/31/07 | 3,737,550 | 0 | 177,180 | 0 | 179,747 | 177,180 | 179,747 | 356,927 |
| 01/01/08 - 12/31/08 | 4,214,237 | 0 | 16,389 | 0 | 58,573 | 16,389 | 58,573 | 74,962 |
| 01/01/09 - 12/31/09 | 4,052,991 | 0 | 48,565 | 0 | 101,073 | 48,565 | 101,073 | 149,638 |
| 01/01/10 - 12/31/10 | 3,858,542 | 138,959 | 569,699 | 68,783 | 350,366 | 708,658 | 419,149 | 1,127,807 |
| Total | 20,174,304 | 140,749 | 860,806 | 68,783 | 735,657 | 1,001,555 | 804,440 | 1,805,995 |
| | | **INDICATED PURE PREMIUM** | | | | **4.965** | **3.987** | **8.95** |

The present on rate level pure premiums are developed by adjusting the pure premiums underlying the current loss cost 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 Loss Cost | 3.637 | 4.223 | 7.86 |
| Conversion Factors (Section B) | 1.001 | 1.010 | xxx |
| **PURE PREMIUMS PRESENT ON RATE LEVEL** | | | |
| **(Underlying Pure Premiums) x (Conversion Factor)** | 3.641 | 4.265 | 7.91 |

# RHODE ISLAND
## APPENDIX B-IV

### DERIVATION OF PROPOSED ADVISORY LOSS COST - CODE 6824
Industry Group - F-Class.  Hazard Group - F.

The loss cost for the above captioned classification is then derived as shown in the following exhibit:

|  |  | Indemnity | Medical | Total |
|---|---|---|---|---|
| 1. | Indicated Pure Premium | 4.965 | 3.987 | 8.95 |
| 2. | Pure Premium Indicated by National Relativity | 3.491 | 4.566 | 8.06 |
| 3. | Pure Premium Present on Rate Level | 3.641 | 4.265 | 7.91 |
| 4. | State Credibilities | 17% | 26% | xxx |
| 5. | National Credibilities | 41% | 37% | xxx |
| 6. | Residual Credibilities = 100% - (4) - (5) | 42% | 37% | xxx |
| 7. | Derived by Formula Pure Premiums = (1) x (4) + (2) x (5) + (3) x (6) | 3.805 | 4.304 | 8.11 |
| 8. | Test Correction Factor | 1.0000 | 1.0000 | xxx |
| 9. | Underlying Pure Premiums = (7) x (8) * | 3.806 | 4.304 | 8.11 |
| 10. | Ratio of Manual to Standard Premium |  |  | 1.064 |
| 11. | Loss Cost = (9) x (10) |  |  | 8.63 |
| 12. | Loss Cost Within Swing Limits |  |  | 8.63 |

       Current Loss Cost x Swing Limits
       a) Lower bound = 8.20 x 0.850 = 6.97
       b) Upper bound = 8.20 x 1.150 = 9.43

| 13. | Pure Premiums Underlying Proposed Loss Cost* = ((13TOT) / (9TOT)) x (9) , (13TOT) = (12) / (10) | 3.806 | 4.304 | 8.11 |
|---|---|---|---|---|
| 14. | Disease, Catastrophe and/or Miscellaneous Loadings |  |  | 0.00 |
| 15. | Final Loaded Loss Cost |  |  | 8.63 |

* 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 C-I**

**Impact By Type of Injury Due to the Increase in the Maximum
Weekly Benefit, Effective September 1, 2013**

| Type of Injury | Percentage of Losses * | Effect (%) | |
|---|---|---|---|
| Fatal | 1.2% | 0.2 | |
| Permanent Total | 0.3% | 0.2 | |
| Permanent Partial | 45.9% | 0.1 | |
| Temporary Total | 18.0% | 0.2 | |
| Total Indemnity | 65.4% | 0.1 | ** |
| Medical | 34.6% | 0.0 | |
| Total | 100.0% | 0.1 | ** |

\*  Projections within indemnity are based on the 24-month period ending 12/31/2009
   on the 9/1/2012 law level and developed to an ultimate basis by type of injury.
   The indemnity/medical split is based on Policy Years 2009, 2010, and 2011 financial
   call data projected to 9/1/2013.

\*\*  Weighted average.

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**APPENDIX C-II**

**LONGSHORE AND HARBOR WORKERS' COMPENSATION ACT LAW MEMO**

**Impact By Type of Injury Due to the Increase in the Minimum
and Maximum Weekly Benefit, Effective October 1, 2012**

| Type of Injury | Percentage of Losses* | Effect (%) | |
|---|---|---|---|
| Fatal | 2.5% | + 0.6 | |
| Permanent Total | 3.5% | + 0.4 | |
| Permanent Partial | 35.9% | + 0.2 | |
| Temporary Total | 11.7% | + 0.4 | |
| Total Indemnity | 53.6% | + 0.3 | ** |
| Medical | 46.4% | 0.0 | |
| Total | 100.0% | + 0.2 | ** |

\*   Nationwide losses under Longshore and Harbor Workers' Act for the three-year
    policy period ending 12/31/2009 on the 10/1/2011 law level and developed to an
    ultimate report by type of injury.

\*\* Weighted average.

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## APPENDIX C-III

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

The F-class and Program II, Option II maritime class voluntary loss costs
include the following provision for the federal assessment:

| | | |
|---|---|---:|
| 1) | Estimated Total Expense Needed for 2013* | 123,000,000 |
| 2) | Compensation Payments Reported (on indemnity only) in 2012* | 813,155,807 |
| 3) | Assessment Rate on Indemnity Losses  (1) / (2) | 15.1% |

### Breakdown of Losses Under the Longshore and Harbor Workers Act

| | | |
|---|---|---:|
| 4) | Indemnity Losses (Combination of 1st through 3rd reports) # | 63,433,587 |
| 5) | Medical Losses (Combination of 1st through 3rd reports) # | 54,926,607 |
| 6) | Total Losses  (4) + (5) | 118,360,194 |
| 7) | Assessment Rate on Total Losses  { (3) x (4) }  /  (6) | 8.1% |

\*   Source:  U.S. Department of Labor
\#   Source:  NCCI Workers Compensation Statistical Plan data