

PENNSYLVANIA COMPENSATION RATING BUREAU, INC.

NCCI Filing Memorandum

Attached is an NCCI Filing Memorandum ( ITEM R-1371-2001 UPDATE TO RETROSPECTIVE RATING PLAN PARAMETERS ).

The PCRБ is filing the Table of Expected Loss Ranges as shown in Exhibit III, page 6 of ITEM R-1371.

## FILING MEMORANDUM

### ITEM R-1371—2001 UPDATE TO RETROSPECTIVE RATING PLAN PARAMETERS

(To be effective 12:01 a.m. on July 1, 2001 applicable to new and renewal business only.)

#### PURPOSE

The purpose of this filing is to update the Expected Loss Ranges and State and Hazard Group Severity Relativities of the Retrospective Rating Plan.

#### BACKGROUND

Retrospective Rating is a plan for adjusting the risk premium of a policy according to the loss experience during the effective period of the policy. At the simplest level, an insured's retrospective premium is determined by the formula:  $R = (B + cL)t$ , where

- R = Retrospective Premium, subject to minimum and maximum amounts
- B = Basic Premium
- c = Loss Conversion Factor, generally reflecting loss adjustment expense
- L = Actual incurred loss during the effective policy period
- t = Tax Multiplier

R is not known until after the policy has expired and the actual losses are fully developed.

The Basic Premium contains provisions for the expenses of the carriers. It also includes an insurance charge to compensate for the times losses exceed an amount leading to the maximum premium, but reduced by the average savings resulting from the times losses are less than an amount leading to the minimum premium. The source of the values used to determine the charges and savings is the Table of Insurance Charges.

#### Expected Loss Ranges

The Table of Insurance Charges contains the excess ratios needed to quantify the insurance charge and savings described above. The ratio of actual losses to expected losses, the entry ratio, is used to look up the values in the Table. The charges depend not only on the maximum and minimum subject losses, but also on the size of the insured. The variation in the loss ratios, hence the charges, of the larger employers who expect many losses should be much lower than the variation for smaller employers.

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As inflation increases claim size, there is an apparent growth in the size of the insured employers, but no real change in loss ratio distributions. To correct for the impact of loss size inflation, NCCI is proposing that the Table of Expected Loss Ranges be updated for the trend in average size of loss since the last time such an update was made (Item R-1365, "2000 Table of Insurance Charges"). The current Table of Expected Loss Ranges already includes an estimate of actual severity trend from 10/94 to 10/96 of 5.0%, and an estimate of future annual severity trend from 10/96 to 07/01 of 1.0%. The result is a severity trend assumption of 10.0% from 10/94 to 07/01. The updated estimate of the actual severity trend from 10/94 to 10/97 is 7.5%, and the estimated future annual severity trend is 2.0%. The net result is to update the 7/1/2000 ranges by 7.2% to obtain the 7/1/2001 ranges.

State and Hazard Group Relativities

The variation in the loss ratios of employers in the lower hazard groups should be smaller than the variation for employers in the higher hazard groups. The State and Hazard Group Relativity Factors adjust for this difference by placing lower hazard group employers in a higher Expected Loss Size Range and higher hazard group employers in a lower Expected Loss Size Range than would otherwise be the case. This adjustment affects the selection of the column of the Table of Insurance Charges, which then impacts the basic premium portion of the retrospective policy premium.

The State and Hazard Group Relativities should be updated regularly due to changes in the circumstances (changes in state statutory benefit levels, inflation, etc.) underlying each state's severity.

**PROPOSAL**

Expected Loss Ranges

It is proposed that the Table of Expected Loss Ranges be updated for the trend in average size of loss since the last time such an update was made. The proposed ranges can be found in Exhibit III.

State and Hazard Group Relativities

It is further proposed that the State and Hazard Group Relativities of the Retrospective Rating Plan be updated for each state. Exhibit I provides a description of the development of the relativities. As explained in the exhibit, individual state severities, as well as countrywide severities are used in the calculation of the relativities.

The proposed relativities can be found in Exhibit II.

It is proposed that these changes are to be effective 12:01 a.m., on July 1, 2001, for use by companies affiliated with NCCI for Large Accounts License, Service, and Maintenance, applicable to new and renewal business only.

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**IMPACT**

Expected Loss Ranges

The proposed Expected Loss Ranges are necessary to maintain the aggregate expected balance between the retrospectively rated premium and the guaranteed cost premium. If these ranges were not updated, there would be a natural slippage caused by inflation because risks would have an apparent growth as seen by increasing expected losses, but no real change in their loss ratio distributions.

State and Hazard Group Relativities

Retrospective rating should produce premium that is equitably distributed to all insured employers, but on average close to the guaranteed cost in the approved rate. The object of the update to the State and Hazard Group Relativities of the Retrospective Rating Plan is to maintain the aggregate expected balance, but the impact will vary slightly for individual insured employers. Thus, insurance charges and premiums will be higher for some insureds and lower for others, depending on their state and hazard group assignments. For most of the insured employers electing retrospective rating, the impact on final premium from these changes will be quite small.

The improved equitability from this change will result in slightly lower average insurance charges for some states, and slightly higher for others. However, this statewide impact will be negligible. The program is designed to be revenue neutral countrywide.

**IMPLEMENTATION**

The attached exhibits outline the changes necessary in the Retrospective Rating Plan Manual for Workers Compensation and Employers Liability Insurance.

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**EXHIBIT I**

**DEVELOPMENT OF STATE AND HAZARD GROUP RELATIVITIES**

- Step 1. Individual state severities are calculated for each hazard group.
- Step 2. The severities are weighted with the countrywide severities by hazard group using a credibility that varies by state. For this purpose, we regard 155,000 claims as fully credible, and use the square root rule to compute partial credibilities.
- Step 3. Credibility weighted severities for each state and hazard group are produced. A new countrywide average severity is calculated by taking the weighted average of the formula state severities using claim counts as weights.
- Step 4. The relativities are calculated by dividing the countrywide severity by the individual state and hazard group severities.

**Example: State X**

<u>Step 1</u>	<u>Hazard Group</u>	<u>State X</u>	<u>Countrywide</u>
Severities	1	21,361	17,155
	2	23,085	18,894
	3	33,771	29,974
	4	45,265	43,752
<u>Step 2</u>	<b>Claim Count</b>	<b>59,672</b>	
	<b>Credibility</b>	<b>=</b>	<b><math>(59,672/155,000)^{0.5} = 0.62</math></b>
<u>Step 3</u>	<u>Hazard Group</u>	<u>State X</u>	
Cred. Wtd. Severities	1	19,763	= 0.62 x 21,361 + 0.38 x 17,155
	2	21,492	
	3	32,328	
	4	44,690	
	<b>Countrywide Overall: 23,381</b>		
<u>Step 4</u>	<u>Hazard Group</u>	<u>State X</u>	
Relativities	1	1.18	= 23,381/19,763
	2	1.09	
	3	0.72	
	4	0.52	

**Note:** The underlying data source for the above calculations is the Unit Statistical Plan (USP), excluding medical only claims. The USP data for each state is adjusted accordingly, as reflected in the data underlying the Excess Loss Factor (ELF) calculation.

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EXHIBIT II

STATE HAZARD GROUP RELATIVITIES  
EFFECTIVE 7/01/2001

State	I	II	III	IV
AK	1.52	1.35	0.86	0.60
AL	1.15	1.01	0.62	0.42
AR	1.57	1.39	0.89	0.63
AZ	1.47	1.32	0.80	0.55
CO	1.14	1.00	0.62	0.40
CT	1.65	1.49	0.96	0.66
DC	1.35	1.22	0.74	0.51
FL	0.87	0.78	0.46	0.30
GA	1.27	1.12	0.70	0.48
HI	1.62	1.46	0.91	0.63
IA	1.53	1.40	0.91	0.63
ID	1.53	1.19	0.76	0.53
IL	1.51	1.41	0.97	0.69
IN	1.60	1.48	1.02	0.73
KS	1.52	1.37	0.89	0.63
KY	1.26	1.12	0.68	0.45
LA	1.26	1.14	0.71	0.50
MD	1.42	1.27	0.79	0.55
ME	1.38	1.26	0.79	0.56
MI	1.39	1.32	0.83	0.58
MO	1.87	1.69	1.12	0.77
MS	1.38	1.27	0.80	0.56
MT	1.38	1.23	0.77	0.53
NC	1.06	0.94	0.58	0.39
NE	1.27	1.12	0.70	0.48
NH	1.36	1.22	0.74	0.51
NM	1.49	1.32	0.84	0.59
NV	1.44	1.26	0.80	0.57
OK	1.49	1.39	0.89	0.62
OR	1.87	1.65	1.00	0.68
RI	1.54	1.35	0.84	0.58
SC	1.48	1.32	0.85	0.60
SD	1.46	1.28	0.78	0.52
TN	1.12	1.01	0.66	0.47
UT	1.73	1.52	0.92	0.60
VA	1.24	1.11	0.68	0.47
VT	1.38	1.24	0.79	0.55
WI	1.89	1.78	1.21	0.84

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EXHIBIT III

2001 - TABLE OF EXPECTED LOSS RANGES

The following Table of Expected Loss Ranges is effective July 1, 2001

Expected Loss Group	Range Rounded Values	Expected Loss Group	Range Rounded Values	Expected Loss Group	Range Rounded Values
95	430 -- 671	65	36053 -- 38938	35	449651 -- 504854
94	672 -- 994	64	38939 -- 42056	34	504855 -- 566837
93	995 -- 1312	63	42057 -- 45422	33	566838 -- 646366
92	1313 -- 1735	62	45423 -- 49058	32	646367 -- 742956
91	1736 -- 2257	61	49059 -- 52985	31	742957 -- 853981
90	2258 -- 2725	60	52986 -- 57238	30	853982 -- 981599
89	2726 -- 3290	59	57239 -- 61888	29	981600 -- 1166840
88	3291 -- 3819	58	61889 -- 66821	28	1166841 -- 1395287
87	3820 -- 4433	57	66822 -- 71996	27	1395288 -- 1668462
86	4434 -- 5142	56	71997 -- 77572	26	1668463 -- 2056868
85	5143 -- 5815	55	77573 -- 83581	25	2056869 -- 2617424
84	5816 -- 6574	54	83582 -- 90374	24	2617425 -- 3330748
83	6575 -- 7424	53	90375 -- 97745	23	3330749 -- 4256111
82	7425 -- 8260	52	97746 -- 105720	22	4256112 -- 5446097
81	8261 -- 9191	51	105721 -- 114342	21	5446098 -- 6968796
80	9192 -- 10224	50	114343 -- 123387	20	6968797 -- 8917234
79	10225 -- 11375	49	123388 -- 133126	19	8917235 -- 11410444
78	11376 -- 12553	48	133127 -- 143703	18	11410445 -- 15651781
77	12554 -- 13820	47	143704 -- 156342	17	15651782 -- 23148859
76	13821 -- 15216	46	156343 -- 170091	16	23148860 -- 34236979
75	15217 -- 16721	45	170092 -- 185049	15	34236980 -- 50636219
74	16722 -- 18307	44	185050 -- 202219	14	50636220 -- 74890565
73	18308 -- 20042	43	202220 -- 221271	13	74890566 -- 110762548
72	20043 -- 21944	42	221272 -- 242119	12	110762549 -- 173385693
71	21945 -- 23954	41	242120 -- 266906	11	173385694 -- 274365607
70	23955 -- 26129	40	266907 -- 294958	10	274365608 -- 434156275
69	26130 -- 28499	39	294959 -- 325958	9	434156276 -- & over
68	28500 -- 30900	38	325959 -- 360215		
67	30901 -- 33376	37	360216 -- 400481		
66	33377 -- 36052	36	400482 -- 449650		