

RULES – IMPLEMENTATION

DECEMBER 31, 2018

COMMERCIAL MULTIPLE LINE

LI-ML-2018-065

INDIANA COMMERCIAL PACKAGE POLICY REVISED PACKAGE MODIFICATION FACTOR REVISION TO BE IMPLEMENTED; EXCEL WORKBOOK NEWLY INCLUDED

KEY MESSAGE

Revised Commercial Package Policy package modification factors for an overall statewide change of +0.1% to be implemented.

BACKGROUND

In circular [LI-ML-2018-044](#), we provided you with information about the Commercial Package Policy modification factor experience review.

ISO ACTION

We are implementing ML-2018-RLA1, which presents a review of Commercial Package Policy modification factors experience. Refer to the attachment(s) for complete details.

EFFECTIVE DATE

The ISO revision is subject to the following rule of application:

These changes are applicable to all policies written on or after June 1, 2019.

COMPANY ACTION

If you have authorized us to file on your behalf and decide:

- To use our revision and effective date, you are not required to file anything with the Insurance Department.
- To use our revision with a different effective date, to use our revision with modification, or to not use our revision, you must make an appropriate submission with the Insurance Department.

For guidance on submission requirements, consult the ISO State Filing Handbook.

WE WILL SUBMIT THIS REVISION TO THE INSURANCE DEPARTMENT ON MAY 1, 2019. IF STATE FILING REQUIREMENTS DICTATE THAT YOU MAKE A SUBMISSION WITH THE INSURANCE DEPARTMENT, DO NOT SUBMIT IT PRIOR TO THIS DATE.

In all correspondence with the Insurance Department on this revision, you should refer to ISO Filing Designation Number **ML-2018-RLA1**, NOT this circular number. Communications with the regulator concerning a filing affecting multiple lines of business (i.e., CL, PL, AL filing designation) should specify the line(s) of business that you are addressing.

RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

POLICYHOLDER NOTIFICATION

If you decide to implement this revision, you should check all applicable laws for the state(s) to which this revision applies, to determine whether or not a specific policyholder notice requirement may apply. Please note that circular [LI-CL-2018-044](#) contains the ISO Guide To Renewals With Changed Conditions For Commercial Lines, which is available only as a guide to assist participating companies in complying with various conditional renewal statutes or regulations, for the major commercial lines of insurance serviced by ISO. The information in the Guide does not necessarily reflect all requirements or exceptions that may apply, and it is not intended as a substitute for your review of all applicable statutes and regulations concerning policyholder notification.

REVISION DISTRIBUTION

We will issue a Notice to Manualholders with an edition date of 6-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

REFERENCE(S)

- [LI-CL-2018-044](#) (11/27/2018) Revised Lead Time Requirements Listing
- [LI-ML-2018-044](#) (10/30/2018) Commercial Package Policy Experience Reviewed By Staff

ATTACHMENT(S)

- Filing [ML-2018-RLA1](#)
- Excel Workbook

FILES AVAILABLE FOR DOWNLOAD

To download all files associated with this circular, including attachments in the full circular PDF and/or any additional files not included in the PDF, search for the circular number on [ISOnet Circulars](#). Then click the Word/Excel link under the Full Circular column on the Search Results screen.

Please note that in some instances, not all files listed in the Attachment(s) block (if applicable) are included in the PDF.

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ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS

The American Academy of Actuaries' "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" requires that an actuary issuing a Statement of Actuarial Opinion should include an acknowledgment with the opinion that he/she has met the qualification standards of the AAA. ISO considers this rule revision a Statement of Actuarial Opinion; therefore we are including the following acknowledgment:

I, Rimma Maasbach, am an Actuarial Consultant in Actuarial Operations for ISO, and I, Bei Zhou, am an Actuarial Product Director for Commercial Property for ISO. We are jointly responsible for the content of this Statement of Actuarial Opinion. We are both members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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INDIANA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY
ML-2018-RLA1

EXECUTIVE SUMMARY

PURPOSE

This document:

- presents a review of advisory Package Modification Factors (PMFs). PMFs are relativity factors used to adjust monoline loss costs as appropriate for multiline risks.
 - provides the analyses used to derive these advisory PMFs.
-

PMF CHANGES

The proposed Commercial Package Policy (CPP) Package Modification Factor changes are:

<u>Type of Policy</u>	<u>Property</u>	<u>Liability</u>	<u>Prop. & Liab.</u> <u>Total</u>
Motel/Hotel	0.0%	+0.0%	+0.0%
Apartment	+2.2	0.0	+1.6
Office	+7.0	0.0	+2.5
Mercantile	-1.0	+2.2	+0.3
Institutional	-1.4	-3.1	-1.9
Services	0.0	-1.0	-0.4
Indust./Proc.	-1.2	-1.1	-1.2
Contractors	<u>0.0</u>	<u>+1.2</u>	<u>+1.0</u>
Statewide	-0.6%	+0.9%	+0.1%

INDICATED
VS. CAPPED

Indicated PMF changes are based on standard ISO methodology. Differences between indicated and capped PMF changes are caused by rounding each indicated PMF to the nearest one percent and applying an upper cap of 1.00, where necessary.

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

EXECUTIVE SUMMARY

HISTORICAL SOURCE DATA

The data used in this review is from ISO reporting companies for:

- Basic Group I: five fiscal accident years ending 09/30/17.
 - Basic Group II: ten fiscal accident years ending 09/30/17.
 - Special Causes of Loss: five fiscal accident years ending 09/30/17.
 - Crime: calendar year ending 06/30/16.
 - Inland Marine: five calendar accident years ending 12/31/16.
 - Fidelity: policy year ending 12/31/15.
 - Owners, Landlords, and Tenants: five fiscal accident years ending 09/30/17.
 - Manufacturers and Contractors: five fiscal accident years ending 09/30/17.
 - Products: three calendar accident years ending 12/31/16.
 - Local Products and Completed Operations: three calendar accident years ending 12/31/16.
-

PRIOR ISO REVISIONS

The latest revisions in this state are:

<u>Filing</u>	ML-17-RLA1	ML-12-RLA1	ML-08-RLA1
<u>Dates</u>			
Implemented	05/01/2018	10/01/2012	10/01/2010
<u>Changes</u>			
Indicated	+1.5%	+3.7%	+0.4%
Filed	+1.5%	+3.8%	+0.4%
Implemented	+1.5%	+3.8%	+0.4%

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY
ML-2018-RLA1

EXECUTIVE SUMMARY

ADJUSTMENTS
TO REPORTED
EXPERIENCE

Standard actuarial procedures have been used in the reviews underlying the calculation of the PMFs, including adjusting the fire and liability losses to ultimate settlement level and, for all coverages, reflecting all loss adjustment expenses and trend. Specific procedures vary by subline.

TEN LARGEST
GROUPS IN
ISO DATA BASE

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for the year ending 12/31/17 for the Annual Statement Line of Business (ASLOB) indicated.

COMMERCIAL MULTI PERIL (ASLOB 51 & 52)

1. Cincinnati Insurance Company
 2. Liberty Mutual Insurance Company
 3. Travelers Indemnity Company
 4. American International Group
 5. Tokio Marine Companies
 6. Hanover Insurance Company
 7. Westfield Insurance Company
 8. Continental Casualty Company
 9. Insurance Company of North America
 10. Society Insurance Company
-

SIZE OF ISO
DATA BASE

The market share of ISO participating insurers as measured by Annual Statement Page 15 written premium for the year ending 12/31/17 is:

Commercial Multi Peril (ASLOB 51 & 52). 49.3%.

ADDITIONAL
SUPPORTING
MATERIAL

Additional supporting material underlying the calculation of the experience review indications used in this PMF analysis may be found in the respective monoline experience review documents for each line.

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY
ML-2018-RLA1

EXECUTIVE SUMMARY

COMPANY DECISION

We encourage each insurer to decide independently whether the judgments made and the procedures or data used by ISO in developing the PMFs contained herein are appropriate for your use. We have included within this document the information upon which ISO relied in order to enable companies to make such independent judgments. The data underlying the enclosed material comes from companies reporting to Insurance Services Office, Inc. Therefore, the ISO experience permits the establishment of a much broader statistical ratemaking base than could be employed by using any individual company's data. A broader data base enhances the validity of ratemaking analysis derived therefrom.

At the same time, however, an individual company may benefit from a comparison of its own experience to the aggregate ISO experience, and may reach valid conclusions with respect to the manner in which its own costs can be expected to differ from ISO's projection based on the aggregate data.

Some calculations included in this document involve areas of ISO staff judgment. Each company should carefully review and evaluate whether the ISO selected PMFs are appropriate for its use.

The material has been developed exclusively by the staff of Insurance Services Office, Inc.

COMMERCIAL PACKAGE POLICY

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COMMERCIAL PACKAGE POLICY
METHODOLOGY OVERVIEW

OBJECTIVE

A Commercial Package Policy (CPP) is essentially a combination of monoline coverages. CPP pricing employs monoline loss costs modified by Package Modification Factors (PMFs). These factors vary by the eight CPP types of policy and are reviewed annually. Monoline and multiline experience are combined and reviewed via a monoline/multiline relativity analysis. The resulting indicated PMFs represent the loss cost for a CPP relative to that for monoline policies providing the same coverages.

STEP 1: THE
RELATIVITY
ANALYSES

Each line of insurance develops indicated changes to monoline and multiline aggregate loss costs based on an experience ratio relativity analysis for that coverage. The monoline indication represents the needed change to monoline loss costs. The multiline indication represents the needed change to multiline aggregate loss costs, which is implemented through changes to the PMFs. For this PMF analysis, multiline indications are developed for each line of insurance and Type of Policy. Relativity analyses are explained in Section B.

STEP 2:
CALCULATION
OF THE PMFs

The procedure described above generates indicated Implicit PMFs (IPMFs) which vary by the various lines of insurance and by type of policy. IPMFs represent what the PMF would be for the CPP risk if only a single coverage were written. For each Type of Policy, IPMFs are weighted by CPP aggregate loss costs to determine the indicated property and liability PMFs. These PMFs may be capped, or rounded to the nearest one percent, and certain component IPMFs appropriately adjusted for this change. These calculations are explained in the remainder of Section A.

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TABLE 1
COMMERCIAL PACKAGE POLICY

SUMMARY OF THIS REVIEW

The display below summarizes the review and shows the capped Package Modification Factors for Property and Liability. For each type of risk, the PMFs are determined to be those factors which when applied to the monoline loss costs produce the appropriate CPP aggregate loss cost level as determined by an analysis of the CPP experience.

TYPE OF POLICY	PROPERTY PMFS			LIABILITY PMFS			PROP. & LIAB. TOTAL
	CURRENT	CAPPED	% CHANGE	CURRENT	CAPPED	% CHANGE	% CHANGE
MOTEL/HOTEL (31)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
APARTMENT (32)	0.92	0.94	2.2%	1.00	1.00	0.0%	1.6%
OFFICE (33)	0.86	0.92	7.0%	1.00	1.00	0.0%	2.5%
MERCANTILE (34)	0.98	0.97	-1.0%	0.92	0.94	2.2%	0.3%
INSTITUTION (35)	0.69	0.68	-1.4%	0.97	0.94	-3.1%	-1.9%
SERVICES (36)	1.00	1.00	0.0%	1.00	0.99	-1.0%	-0.4%
IND/PROC (37)	0.81	0.80	-1.2%	0.89	0.88	-1.1%	-1.2%
CONTRACTORS (38)	1.00	1.00	0.0%	0.83	0.84	1.2%	1.0%
STATEWIDE			-0.6%			0.9%	0.1%

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TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

MOTEL/HOTEL (31) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	404,085	0.804	-0.9%	0.797	0.789
BASIC GRP II	216,638	1.398	1.2	1.415	1.401
SP CAUSE/LOSS	148,838	1.437	0.1	1.438	1.425
*CRIME	2,401	0.898	0.0	0.898	0.898
*INL. MAR.	6,792	0.910	10.4	1.005	1.005
*FIDELITY	5,954	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>784,708</u>	<u>1.00</u>	<u>0.9%</u>	<u>1.009</u>	<u>1.00</u>
LIABILITY-					
OL&T	1,465,274	1.000	0.6%	1.006	1.000
<u>TOTAL</u>	<u>1,465,274</u>	<u>1.00</u>	<u>0.6%</u>	<u>1.006</u>	<u>1.00</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	2,249,982		0.7%		
APARTMENT (32) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	4,890,309	0.706	-4.0%	0.678	0.697
BASIC GRP II	3,036,878	1.500	0.0	1.500	1.500
SP CAUSE/LOSS	1,717,751	1.285	-0.2	1.282	1.320
*CRIME	1,053	0.898	0.0	0.898	0.898
*INL. MAR.	10,137	0.910	10.4	1.005	1.005
*FIDELITY	7,337	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>9,663,465</u>	<u>0.92</u>	<u>-0.2%</u>	<u>0.918</u>	<u>0.94</u>
LIABILITY-					
OL&T	3,303,160	1.000	5.6%	1.056	1.000
<u>TOTAL</u>	<u>3,303,160</u>	<u>1.00</u>	<u>5.6%</u>	<u>1.056</u>	<u>1.00</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	12,966,625		1.3%		

* indicates coverage for which reviews are on a MULTISTATE basis.

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TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

OFFICE (33) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	1,883,501	0.779	-1.8%	0.765	0.831
BASIC GRP II	1,198,294	0.861	-4.8	0.820	0.890
SP CAUSE/LOSS	1,071,755	1.040	0.7	1.047	1.137
*CRIME	6,810	0.898	0.0	0.898	0.898
*INL. MAR.	98,220	0.910	10.4	1.005	1.005
*FIDELITY	35,595	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>4,294,175</u>	<u>0.86</u>	<u>-1.7%</u>	<u>0.846</u>	<u>0.92</u>
LIABILITY-					
OL&T	6,953,171	1.007	5.3%	1.060	1.013
M&C	555,450	0.897	-0.8	0.890	0.850
<u>TOTAL</u>	<u>7,508,621</u>	<u>1.00</u>	<u>4.6%</u>	<u>1.046</u>	<u>1.00</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	11,802,796		2.3%		
MERCANTILE (34) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	6,195,351	0.833	-6.7%	0.777	0.777
BASIC GRP II	4,891,257	1.181	-3.3	1.142	1.142
SP CAUSE/LOSS	3,499,298	1.136	3.9	1.180	1.180
*CRIME	48,921	0.898	0.0	0.898	0.898
*INL. MAR.	635,405	0.910	10.4	1.005	1.005
*FIDELITY	235,763	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>15,505,995</u>	<u>0.98</u>	<u>-1.3%</u>	<u>0.967</u>	<u>0.97</u>
LIABILITY-					
OL&T	7,727,683	0.958	2.4%	0.981	0.981
M&C	1,514,635	0.889	-1.7	0.874	0.874
LOCAL PRODUCT	439,900	0.820	2.4	0.840	0.840
*MULTI PRODUCT	1,428,276	0.832	3.7	0.862	0.862
<u>TOTAL</u>	<u>11,110,494</u>	<u>0.92</u>	<u>2.5%</u>	<u>0.943</u>	<u>0.94</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	26,616,489		0.3%		

* indicates coverage for which reviews are on a MULTISTATE basis.

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TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

INSTITUTION (35) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	6,812,829	0.558	1.0%	0.564	0.564
BASIC GRP II	8,555,755	0.763	-9.5	0.691	0.691
SP CAUSE/LOSS	5,496,354	0.804	8.1	0.869	0.869
*CRIME	64,404	0.898	0.0	0.898	0.898
*INL. MAR.	162,297	0.910	10.4	1.005	1.005
*FIDELITY	202,964	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>21,294,603</u>	<u>0.69</u>	<u>-0.8%</u>	<u>0.684</u>	<u>0.68</u>
LIABILITY-					
OL&T	6,775,844	1.011	-3.0%	0.981	0.981
M&C	356,907	0.532	1.7	0.541	0.541
<u>TOTAL</u>	<u>7,132,751</u>	<u>0.97</u>	<u>-3.0%</u>	<u>0.941</u>	<u>0.94</u>

PROP. & LIAB. TOTAL	28,427,354		-1.4%		
SERVICES (36) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	4,487,017	0.836	-1.2%	0.826	0.826
BASIC GRP II	3,890,001	1.257	-3.2	1.217	1.217
SP CAUSE/LOSS	2,411,752	1.066	3.5	1.103	1.103
*CRIME	22,104	0.898	0.0	0.898	0.898
*INL. MAR.	84,170	0.910	10.4	1.005	1.005
*FIDELITY	110,106	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>11,005,150</u>	<u>1.00</u>	<u>-0.3%</u>	<u>0.997</u>	<u>1.00</u>
LIABILITY-					
OL&T	3,040,076	0.897	-0.5%	0.893	0.893
M&C	3,169,674	1.049	-1.1	1.037	1.038
LOCAL PRODUCT	1,038,981	1.291	0.5	1.297	1.298
*MULTI PRODUCT	291,846	0.899	1.7	0.914	0.914
<u>TOTAL</u>	<u>7,540,577</u>	<u>1.00</u>	<u>-0.5%</u>	<u>0.995</u>	<u>0.99</u>

PROP. & LIAB. TOTAL	18,545,727		-0.4%		

* indicates coverage for which reviews are on a MULTISTATE basis.

INDIANA
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

IND/PROC (37) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	6,120,569	0.942	0.5%	0.947	0.947
BASIC GRP II	1,847,380	0.582	-0.1	0.581	0.581
SP CAUSE/LOSS	1,986,787	0.736	-4.6	0.702	0.702
*CRIME	9,599	0.898	0.0	0.898	0.898
*INL. MAR.	13,413	0.910	10.4	1.005	1.005
*FIDELITY	130,677	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>10,108,425</u>	<u>0.81</u>	<u>-1.0%</u>	<u>0.802</u>	<u>0.80</u>
LIABILITY-					
M&C	4,841,512	0.912	-1.0	0.903	0.903
LOCAL PRODUCT	159,712	0.596	-1.2	0.589	0.589
*MULTI PRODUCT	3,068,772	0.884	-2.8	0.860	0.860
<u>TOTAL</u>	<u>8,069,996</u>	<u>0.89</u>	<u>-1.5%</u>	<u>0.877</u>	<u>0.88</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	18,178,421		-1.2%		
CONTRACTORS (38) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	1,070,726	0.746	-1.0%	0.739	0.739
BASIC GRP II	1,083,527	1.165	-2.1	1.141	1.141
SP CAUSE/LOSS	1,083,446	1.272	0.0	1.272	1.272
*CRIME	4,854	0.898	0.0	0.898	0.898
*INL. MAR.	11,234	0.910	10.4	1.005	1.005
*FIDELITY	107,740	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>3,361,527</u>	<u>1.00</u>	<u>-0.4%</u>	<u>0.996</u>	<u>1.00</u>
LIABILITY-					
M&C	11,483,040	0.919	-0.1	0.918	0.918
LOCAL PRODUCT	7,828,367	0.755	-0.9	0.748	0.748
<u>TOTAL</u>	<u>19,311,407</u>	<u>0.83</u>	<u>1.3%</u>	<u>0.841</u>	<u>0.84</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	22,672,934		1.1%		

* indicates coverage for which reviews are on a MULTISTATE basis.

INDIANA
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

STATEWIDE *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-		PMF			
BASIC GRP I	31,864,387	0.745	-1.9%	0.730	0.737
BASIC GRP II	24,719,730	0.946	-4.8	0.901	0.905
SP CAUSE/LOSS	17,415,981	0.957	3.3	0.989	0.996
*CRIME	160,146	0.898	0.0	0.898	0.898
*INL. MAR.	1,021,668	0.910	10.4	1.005	1.005
*FIDELITY	836,136	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>76,018,048</u>	<u>0.850</u>	<u>-1.3%</u>	<u>0.839</u>	<u>0.845</u>
LIABILITY-					
OL&T	29,265,208	0.981	1.8%	0.999	0.982
M&C	21,921,218	0.920	-0.5	0.915	0.914
LOCAL PRODUCT	9,466,960	0.790	-0.6	0.786	0.786
*MULTI PRODUCT	4,788,894	0.869	-0.6	0.864	0.864
<u>TOTAL</u>	<u>65,442,280</u>	<u>0.909</u>	<u>1.7%</u>	<u>0.924</u>	<u>0.917</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	141,460,328		0.1%		

* indicates coverage for which reviews are on a MULTISTATE basis.

INDIANA

TABLE 2

COMMERCIAL PACKAGE POLICY

COMBINED PMFs

<u>TYPE OF POLICY</u>	<u>CURRENT COMBINED</u>	<u>INDICATED COMBINED</u>	<u>CAPPED COMBINED</u>
MOTEL/HOTEL (31)	1.00	1.007	1.00
APARTMENT (32)	0.94	0.952	0.95
OFFICE (33)	0.94	0.966	0.97
MERCANTILE (34)	0.96	0.956	0.96
INSTITUTION (35)	0.74	0.734	0.73
SERVICES (36)	1.00	0.996	1.00
IND/PROC (37)	0.85	0.833	0.83
CONTRACTORS (38)	0.85	0.861	0.86

NOTE: Combined PMFs are provided for informational purposes only.

EXPLANATORY NOTES TO TABLE 2

CALCULATION OF REVISED PACKAGE MODIFICATION FACTORS

OBJECTIVE Commercial package policies were introduced in the 1960's as a convenient tool for both insurer and insured to have the many types of insurance needed by commercial risks packaged under one cover. Thus fire, extended coverage, crime, liability insurance, etc. could be written using a single policy instead of several. Today, virtually any type of monoline coverage can also be purchased as part of a package policy such as the CPP.

The types of insured which can be written under a CPP are generally categorized into the following Types of Policy:

- . Motels and Hotels (TOP 31)
- . Apartments (TOP 32)
- . Offices (TOP 33)
- . Mercantile Operations (TOP 34)
- . Institutions (TOP 35)
- . Service Operations (TOP 36)
- . Industrial and Processing Operations (TOP 37)
- . Contractors (TOP 38)

PRICING OF POLICIES Since a CPP is essentially a combination of monoline coverages, CPP pricing employs monoline loss costs modified by PMFs (Package Modification Factors). These factors vary by the categories shown above and are reviewed annually.

CPP PMF REVIEW PROCEDURE The CPP review of Package Modification Factors, which appears in Table 2 of this document, determines the appropriate PMF loss cost level for each of the eight CPP categories. This is done by combining the indications of the simultaneous reviews of monoline and multiline experience for the various lines (or coverages).

A detailed explanation of the calculation of the revised PMFs follows.

EXPLANATORY NOTES TO TABLE 2 (Cont'd)

LINES OF INSURANCE (COVERAGES) INCLUDED

The CPP review reflects the contribution from each significant coverage which can be written on a CPP. Included are:

Property Coverages

- . Basic Group I (BGI) - the predominant property coverage included.
- . Basic Group II (BGII) - both Basic Group I and Basic Group II must be purchased under a CPP contract.
- . Special Causes of Loss (SCL) - typically a type of insurance which is purchased in addition to Basic Group I and Basic Group II in order to provide "all risk" property coverage for the insured.
- . Crime (CRIME) - Crime insurance is a commonly purchased CPP coverage.
- . Inland Marine (INL. MAR.) - A highly specialized line of property insurance, Inland Marine coverages can be purchased as part of a package policy.
- . Fidelity (FIDELITY) - Certain forms of fidelity insurance can be part of the CPP package. Various forms of employee dishonesty coverage are available.

Liability Coverages

- . Owners, Landlords and Tenants (OL&T) Liability - this is the prevalent type of Premises/Operations liability for CPP insureds.
- . Manufacturers and Contractors Liability (M&C) - this is the type of Premises/Operations liability insurance for risks whose liability exposure is more heavily off-premises than on.
- . Products/Completed Operations Liability (PROD) - this type of insurance protects against claims for damages arising from products/completed operations in conjunction with an insured's business. For review purposes, this line of insurance is split into the following two categories:
 - Products: experience for this category is reviewed on a multistate basis.
 - Local Products/ Completed Operations: experience for this category reflects an exposure to loss which is local in nature; therefore, individual state experience is used.

EXPLANATORY NOTES TO TABLE 2 (Cont'd)

THE IMPLICIT
PACKAGE
MODIFICATION
FACTOR

For each applicable coverage listed under each of the eight (8) CPP categories, a "current implicit PMF" is shown in column (2). The definition of this factor follows:

For a given CPP category (e.g., apartments) the published Package Modification Factor (PMF) represents the loss cost for a CPP relative to that for monoline policies providing the same coverages. Thus a property (liability) PMF of .80 represents a 20% lower aggregate loss cost for a CPP than for the comparable monoline policies. This PMF, however, represents the CPP "loss cost" for all property (liability) coverages combined. Based on CPP experience, it has been determined that this CPP "loss cost" can differ significantly if it is determined for each property (liability) coverage individually. The IPMF represents what the PMF would be for that CPP risk if only a single coverage were written. The use of the IPMF in monoline/multiline ratemaking and in the determination of revised CPP Package Modification Factors is significant in that it appropriately identifies how different the component parts of the multiline "loss cost" are.

THE MULTILINE
INDICATION

Under the CPP ratemaking procedures, monoline and multiline experience are combined for each coverage. The results of these coverage analyses are indicated changes to monoline loss costs and also indicated CPP aggregate loss cost level changes. The CPP indications by coverage are then incorporated in the CPP PMF review. These indications (shown in column (3)) represent the needed adjustments to the IPMFs (shown in column (2)) described above.

The development of these indications is detailed in Section B.

THE INDICATED
PMF

For each CPP category (and for property vs. liability), the indicated PMF is calculated as follows:

Each of the current IPMFs in column (2) is multiplied by the indicated percent change shown in column (3). A weighted average of the indicated IPMFs, using weights based on latest year aggregate loss costs at current ISO loss cost level (column (1) divided by column (2)), yields the indicated PMF at the bottom of column (4).

THE CAPPED
PMF

The indicated PMF for each category (and for property vs. liability) shown at the bottom of column (4) is limited to a maximum of 1.00 in arriving at the proposed PMF (bottom of column (5)). All indicated PMFs which are below 1.00 are rounded to the nearest .01 in determining the proposed PMF. To the extent that any indicated PMFs are capped at 1.00, indicated PMFs below this value are adjusted in order to minimize any revenue changes which would result from capping.

In addition to the adjustments just described, the IPMFs (for property and liability) shown in column (4) are subject to minimum and maximum values and adjusted in column (5) so that they average to the proposed PMF shown at the bottom of column (5).

COMMERCIAL PACKAGE POLICY

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TABLE 3 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
TOP	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
10	1.111	0.150	1.016	1.018	
31	1.309	0.024	1.006	1.009	-0.9%
32	0.881	0.202	0.975	0.977	-4.0%
33	0.973	0.080	0.998	1.000	-1.8%
34	0.807	0.252	0.947	0.950	-6.7%
35	1.095	0.273	1.025	1.028	+1.0%
36	1.017	0.199	1.003	1.006	-1.2%
37	1.078	0.268	1.020	1.023	+0.5%
38	1.101	0.056	1.005	1.008	-1.0%

RATING
GROUP

01	1.147	0.319	1.045	1.043	
02	1.090	0.182	1.016	1.014	
03	1.207	0.150	1.029	1.026	
04	1.217	0.430	1.088	1.086	
05	0.980	0.115	0.998	0.996	
06	0.804	0.237	0.950	0.948	
07	0.798	0.279	0.939	0.937	
08	0.922	0.347	0.972	0.970	
09	1.027	0.188	1.005	1.003	
10	0.840	0.061	0.989	0.987	
11	0.853	0.044	0.993	0.991	
13	1.140	0.151	1.020	1.018	
14	0.880	0.205	0.974	0.972	
15	1.088	0.153	1.013	1.011	
17	0.951	0.050	0.997	0.995	
18	0.863	0.081	0.988	0.986	
19	0.833	0.023	0.996	0.994	
20	0.799	0.028	0.994	0.992	
21	0.833	0.336	0.940	0.938	
22	0.905	0.158	0.984	0.982	

TERRITORY

Indianapolis	1.062	0.319	1.019	1.023	
Balance of State	0.991	0.753	0.993	0.997	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP)/MONOLINE RELATIVITY (TOP10) -1

INDIANA

TABLE 4 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
TOP					
10	0.879	0.146	0.981	0.971	
31	0.475	0.023	0.983	0.972	+0.1%
32	0.890	0.181	0.979	0.969	-0.2%
33	0.897	0.109	0.988	0.978	+0.7%
34	1.065	0.307	1.020	1.009	+3.9%
35	1.151	0.422	1.061	1.050	+8.1%
36	1.068	0.243	1.016	1.005	+3.5%
37	0.724	0.204	0.936	0.926	-4.6%
38	0.859	0.125	0.981	0.971	0.0%
CATEGORY					
01	1.106	0.779	1.082	1.073	
02	0.574	0.134	0.928	0.921	
03	0.916	0.138	0.988	0.980	
04	0.604	0.196	0.906	0.899	
05	0.808	0.139	0.971	0.963	
06	1.854	0.084	1.053	1.045	
07	2.770	0.013	1.013	1.005	
08	0.585	0.483	0.772	0.766	
09	0.844	0.227	0.962	0.955	
10	0.991	0.043	1.000	0.992	
11	1.526	0.223	1.099	1.090	
12	0.580	0.192	0.901	0.894	
13	0.729	0.130	0.960	0.952	
14	1.634	0.163	1.083	1.075	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP)/MONOLINE RELATIVITY (TOP10))-1

EXPLANATORY NOTES TO TABLES 3 AND 4

BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

OBJECTIVE

The explanations which follow clarify Tables 3 and 4, the Basic Group I Relativity Analysis and the Special Causes of Loss Relativity Analysis, respectively. The purpose of these analyses is to:

- (1) determine monoline classification and territorial loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level need for Special Causes of Loss;
- (3) determine indicated changes to the eight property CPP Package Modification Factors based on Basic Group I/Special Causes of Loss experience.

COLUMN (1)

LEAST SQUARES FORMULA RELATIVITIES

The Least Squares Formula Relativities are the marginal relativities which result from the application of the simultaneous review procedure to the raw experience (where marginal refers to the relativities for a given rating variable, e.g. type of policy, across all subsets of any other rating variables, i.e. rating group and territory for Basic Group I, and category for Special Causes of Loss).

The purpose of such a simultaneous review procedure is to arrive at a set of type of policy relativities (which will serve to price CPP policies relative to monoline policies via the PMF); a set of rating group/territory relativities for Basic Group I; and a set of category relativities for Special Causes of Loss that best represent the experience. This procedure is in contrast to a review of each rating variable's experience separately. Such one-way types of review do not take into account differing percentages of monoline and multiline experience in each rating variable, or differing percentages of a particular rating variable's experience in the monoline and multiline types of policy. The simultaneous relativity procedure accounts for these different distributions in generating relativities for the various rating variables.

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)
(Cont'd)

The procedure uses an iterative technique to determine a set of marginal relativities by rating variable that is a best fit to the individual cell relativities, with each cell being defined as the cross-section of specific values of each rating variable. The process uses the relativity of the five year experience ratios by rating cell to the overall statewide experience ratio and the latest year aggregate loss costs for each rating cell. (This experience is shown in Table 5 for Basic Group I and Table 6 for Special Causes of Loss). Specifically, the iteration procedure uses the following formulas:

BASIC GROUP I:

$$TOP_i = \frac{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 R_{ijk} RG_j TER_k}{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 RG_j^2 TER_k^2}, \text{ where } 1 \leq i \leq m;$$

$$RG_j = \frac{\sum_{k=1}^t \sum_{i=1}^m W_{ijk}^2 R_{ijk} TOP_i TER_k}{\sum_{k=1}^t \sum_{i=1}^m W_{ijk}^2 TOP_i^2 TER_k^2}, \text{ where } 1 \leq j \leq n$$

$$TER_k = \frac{\sum_{j=1}^n \sum_{i=1}^m W_{ijk}^2 R_{ijk} TOP_i RG_j}{\sum_{j=1}^n \sum_{i=1}^m W_{ijk}^2 TOP_i^2 RG_j^2}, \text{ where } 1 \leq k \leq t$$

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)
(Cont'd)

SPECIAL CAUSES OF LOSS:

$$TOP_i = \frac{\sum_{j=1}^n W_{ij}^2 R_{ij} CAT_j}{\sum_{j=1}^n W_{ij}^2 CAT_j^2}, \text{ where } 1 \leq i \leq m;$$

$$CAT_j = \frac{\sum_{i=1}^m W_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m W_{ij}^2 TOP_i^2}, \text{ where } 1 \leq j \leq n$$

- TOP_i is the relativity for the i th Type of Policy;
- RG_j is the relativity for the j th Rating Group;
- CAT_j is the relativity for the j th Category;
- TER_k is the relativity for the k th Territory;
- W_{ijk} is the loss cost volume at current level for the i th Type of Policy, j th Rating Group or Category and k th Territory;
- R_{ijk} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category and k th Territory;
- R_{ij} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category;

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)
(Cont'd)

- m is the number of Types of Policy in the analysis;
- n is the number of Rating Groups or Categories in the analysis;
- t is the number of Territories in the analysis.

The procedure determines m Type of Policy relativities using the above formulas. Then, using those results, a set of n Rating Group and t Territory relativities are determined. These steps form an iterative process which continues until there is no appreciable difference in results from one iteration to the next.

COLUMN (2)

CREDIBILITY

The credibility of the experience for each rating variable is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the 5-year adjusted aggregate loss costs for a given rating variable, and K is a constant value. For Basic Group I, K equals an aggregate loss cost volume of \$55,000,000 for territory, \$40,000,000 for rating group, and \$100,000,000 for type of policy. For Special Causes of Loss, K equals an aggregate loss cost volume of \$15,000,000.

COLUMN (3)

CREDIBILITY-WEIGHTED RELATIVITIES

Credibility-weighted relativities are calculated based on the formula

$$W = R^Z$$

where Z is the credibility, R is the least squares formula relativity and W is the credibility-weighted relativity for a given rating variable.

This formula implicitly assigns the complement of credibility to a relativity of unity.

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (4)

BALANCED RELATIVITIES

The credibility-weighted relativities are balanced to assure that the average relativity across all rating variables remains at unity.

MULTILINE
CONSIDERATIONS

The type of policy (TOP) relativities are used to generate multiline indications which apply to the current Implicit Package Modification Factors (IPMFs). The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account. If an IPMF has been capped it is so noted at the bottom of Table 3 and Table 4.

Loss cost changes for each TOP are calculated as described on Tables 3 and 4.

ENTIRE STATE

INDIANA
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	173,527	956,719	1.410	1.191	1.195
	02 OTHER HABITATIONAL	238,675	1,197,994	1.583	1.221	1.226
	03 RESTAURANTS & BARS	56,916	267,705	1.347	1.071	1.075
	04 OTHER MERCANTILE RS	537,610	2,709,397	2.385	1.764	1.771
	05 PUBLIC BUILDINGS	300,318	1,363,691	0.857	0.984	0.988
	06 CHURCHES	17,179	118,842	6.950	2.069	2.077
	07 SCHOOLS	37,125	286,193	0.052	0.831	0.835
	08 OFFICES AND BANKS	350,113	2,089,949	0.868	0.854	0.857
	09 REC. FACILITIES	260,392	1,330,978	0.515	0.777	0.779
	10 HOTELS AND MOTELS	16,183	112,733	0.000	0.851	0.855
	11 HOSPITALS/NURS HOME	117,239	729,736	0.162	0.783	0.786
	13 MOTOR VEHICLE RISKS	129,147	864,041	0.211	0.794	0.797
	14 OTHER NON-MANUF.	507,640	2,316,251	0.464	0.774	0.777
	15 STORAGE	357,065	1,127,825	0.870	1.004	1.008
	17 FOOD MANUFACTURING	37,535	126,830	0.000	0.876	0.879
	18 WOOD MANUFACTURING	43,896	235,953	4.852	1.835	1.843
	19 WEARING APPAREL	5,202	61,985	0.000	0.897	0.900
	20 CHEM. MANUFACTURING	15,743	61,315	0.000	0.898	0.902
	21 METAL MANUFACTURING	266,109	1,372,140	0.493	0.846	0.849
	22 OTHER MANUFACTURING	48,370	360,583	0.220	0.861	0.864
	TOTAL*	3,515,984	17,690,860	1.065	1.061	1.065
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	404,085	2,497,121	1.748	1.102	1.106
	TOTAL*	404,085	2,497,121	1.748	1.102	1.106
32 MULTILINE APARTMENT	01 APARTMENTS	3,539,027	17,750,698	1.212	1.200	1.205
	02 OTHER HABITATIONAL	1,351,282	7,597,700	0.956	0.961	0.965
	TOTAL*	4,890,309	25,348,398	1.141	1.134	1.139
33 MULTILINE OFFICE	08 OFFICES AND BANKS	1,883,501	8,675,935	0.685	0.828	0.832
	TOTAL*	1,883,501	8,675,935	0.685	0.828	0.832
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	1,044,078	5,888,766	1.052	0.941	0.945
	04 OTHER MERCANTILE RS	3,611,133	19,892,219	1.025	0.927	0.931
	08 OFFICES AND BANKS	374,132	1,894,715	0.809	0.868	0.871
	13 MOTOR VEHICLE RISKS	307,909	1,360,040	1.768	1.091	1.096
	14 OTHER NON-MANUF.	155,331	854,737	1.928	1.154	1.158
	15 STORAGE	702,768	3,843,408	0.703	0.889	0.892
	TOTAL*	6,195,351	33,733,885	1.040	0.935	0.939

ENTIRE STATE

INDIANA
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	22,387	87,062	0.636	0.917	0.921
	05 PUBLIC BUILDINGS	719,887	3,849,107	1.739	1.113	1.118
	06 CHURCHES	2,061,831	12,316,481	0.617	0.929	0.932
	07 SCHOOLS	2,775,919	15,166,679	0.552	0.886	0.889
	08 OFFICES AND BANKS	360,827	1,602,502	1.408	1.031	1.035
	09 REC. FACILITIES	197,609	1,095,504	0.105	0.830	0.834
	11 HOSPITALS/NURS HOME	234,964	1,131,510	1.118	0.963	0.967
	13 MOTOR VEHICLE RISKS	15,703	67,410	46.670	8.208	8.241
	14 OTHER NON-MANUF.	423,702	2,311,964	0.650	0.927	0.931
	TOTAL*	6,812,829	37,628,219	0.862	0.951	0.955
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	162,304	909,240	0.018	0.882	0.886
	04 OTHER MERCANTILE RS	375,856	2,056,337	0.746	0.963	0.967
	08 OFFICES AND BANKS	757,039	4,362,814	0.285	0.803	0.806
	09 REC. FACILITIES	1,288,918	6,837,185	1.052	1.030	1.034
	13 MOTOR VEHICLE RISKS	832,011	4,745,016	1.303	1.085	1.089
	14 OTHER NON-MANUF.	537,752	2,850,263	1.352	1.075	1.079
	15 STORAGE	392,287	2,079,434	1.449	1.132	1.136
	21 METAL MANUFACTURING	79,877	496,249	0.100	0.893	0.897
	22 OTHER MANUFACTURING	60,973	537,788	0.165	0.902	0.905
	TOTAL*	4,487,017	24,874,326	0.948	1.001	1.005
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	353,124	1,987,359	2.097	1.212	1.217
	08 OFFICES AND BANKS	113,071	673,111	0.183	0.874	0.878
	13 MOTOR VEHICLE RISKS	9,765	54,864	0.000	0.861	0.864
	14 OTHER NON-MANUF.	198,208	1,449,412	1.530	1.119	1.123
	15 STORAGE	61,343	198,822	9.729	2.033	2.041
	17 FOOD MANUFACTURING	359,569	1,998,483	0.860	1.025	1.030
	18 WOOD MANUFACTURING	553,045	3,293,397	0.447	0.907	0.910
	19 WEARING APPAREL	131,086	897,881	0.059	0.879	0.883
	20 CHEM. MANUFACTURING	170,492	1,111,738	0.007	0.828	0.831
	21 METAL MANUFACTURING	3,041,461	18,332,871	0.783	0.904	0.908
	22 OTHER MANUFACTURING	1,129,405	6,591,838	0.751	0.954	0.958
	TOTAL*	6,120,569	36,589,776	0.891	0.954	0.958

ENTIRE STATE

INDIANA
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	(5)
		ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	Z-WEIGHTED EXPERIENCE RATIO	Z-WEIGHTED RELATIVITY
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	638,283	3,491,527	1.670	1.154	1.159
	08 OFFICES AND BANKS	346,905	1,933,238	2.917	1.354	1.359
	14 OTHER NON-MANUF.	85,538	534,190	5.870	1.709	1.716
	TOTAL*	1,070,726	5,958,955	2.410	1.263	1.268
TOTAL ALL TOPS*	01 APARTMENTS	3,712,554	18,707,417	1.221	1.200	1.205
	02 OTHER HABITATIONAL	1,612,344	8,882,756	1.045	0.999	1.003
	03 RESTAURANTS & BARS	1,263,298	7,065,711	0.933	0.939	0.943
	04 OTHER MERCANTILE RS	5,516,006	30,136,839	1.282	1.055	1.060
	05 PUBLIC BUILDINGS	1,020,205	5,212,798	1.479	1.075	1.080
	06 CHURCHES	2,079,010	12,435,323	0.670	0.938	0.942
	07 SCHOOLS	2,813,044	15,452,872	0.546	0.885	0.889
	08 OFFICES AND BANKS	4,185,588	21,232,264	0.873	0.892	0.895
	09 REC. FACILITIES	1,746,919	9,263,667	0.865	0.970	0.973
	10 HOTELS AND MOTELS	420,268	2,609,854	1.681	1.093	1.097
	11 HOSPITALS/NURS HOME	352,203	1,861,246	0.800	0.903	0.907
	13 MOTOR VEHICLE RISKS	1,294,535	7,091,371	1.845	1.142	1.147
	14 OTHER NON-MANUF.	1,908,171	10,316,817	1.228	1.001	1.005
	15 STORAGE	1,513,463	7,249,489	1.302	1.025	1.029
	17 FOOD MANUFACTURING	397,104	2,125,313	0.779	1.011	1.016
	18 WOOD MANUFACTURING	596,941	3,529,350	0.771	0.975	0.979
	19 WEARING APPAREL	136,288	959,866	0.057	0.880	0.884
	20 CHEM. MANUFACTURING	186,235	1,173,053	0.007	0.833	0.837
	21 METAL MANUFACTURING	3,387,447	20,201,260	0.744	0.900	0.904
	22 OTHER MANUFACTURING	1,238,748	7,490,209	0.701	0.948	0.952
	TOTAL*	35,380,371	192,997,475	1.015	0.996	1.000

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

INDIANA

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)
		ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	RELATIVITY
10 MONOLINE	01 BUILDINGS	729,149	3,908,678	0.849	0.996
	02 RES. APTS. AND COND	13,338	108,179	1.522	1.786
	03 OFFICES	70,555	421,985	0.611	0.717
	04 MERCANTILE - HIGH	105,998	557,658	0.524	0.615
	05 MERCANTILE - MEDIUM	21,729	128,450	0.403	0.473
	06 MERCANTILE - LOW	13,726	71,291	0.924	1.085
	07 MOTELS AND HOTELS	883	10,468	0.094	0.110
	08 INSTITUTIONAL - HIG	40,767	343,226	0.353	0.414
	09 INSTITUTIONAL - LOW	56,133	385,923	1.735	2.036
	10 INDUST-PROC - HIGH	11,019	64,880	0.130	0.153
	11 INDUST-PROC - LOW	73,173	371,351	0.208	0.244
	12 SERVICE - HIGH	19,568	149,667	0.831	0.975
	13 SERVICE - LOW	57,656	320,903	1.201	1.410
	14 CONTRACTORS	2,966	19,149	0.087	0.102
	TOTAL*	1,216,660	6,861,808	0.800	0.939
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	123,224	749,924	0.455	0.534
	07 MOTELS AND HOTELS	25,614	179,558	1.145	1.344
		TOTAL*	148,838	929,482	0.574
32 MULTILINE APARTMENT	01 BUILDINGS	1,314,897	6,609,716	0.853	1.001
	02 RES. APTS. AND COND	402,854	2,212,853	0.441	0.518
		TOTAL*	1,717,751	8,822,569	0.756
33 MULTILINE OFFICE	01 BUILDINGS	674,530	3,101,175	0.859	1.008
	03 OFFICES	396,773	1,788,130	0.716	0.840
	04 MERCANTILE - HIGH	23	38	0.000	0.000
	08 INSTITUTIONAL - HIG	11	131	21.493	25.227
	12 SERVICE - HIGH	329	1,430	15.790	18.533
	14 CONTRACTORS	89	179	0.000	0.000
	TOTAL*	1,071,755	4,891,083	0.811	0.952

INDIANA

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	
		ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	RELATIVITY	
34 MULTILINE MERCANTILE	01 BUILDINGS	2,277,946	11,195,605	1.021	1.198	
	03 OFFICES	9,854	44,991	0.712	0.836	
	04 MERCANTILE - HIGH	547,073	2,841,320	0.555	0.651	
	05 MERCANTILE - MEDIUM	384,582	2,275,915	0.746	0.876	
	06 MERCANTILE - LOW	260,576	1,250,198	1.713	2.011	
	08 INSTITUTIONAL - HIG	34	467	0.000	0.000	
	09 INSTITUTIONAL - LOW	5	5	0.000	0.000	
	11 INDUST-PROC - LOW	421	1,145	0.000	0.000	
	12 SERVICE - HIGH	5,074	44,973	0.710	0.833	
	13 SERVICE - LOW	9,524	76,678	7.807	9.163	
	14 CONTRACTORS	4,209	29,384	0.000	0.000	
	TOTAL*	3,499,298	17,760,681	0.985	1.156	
	35 MULTILINE INSTITUTIONAL	01 BUILDINGS	2,225,386	11,680,530	1.104	1.296
		03 OFFICES	1,812	7,363	0.000	0.000
08 INSTITUTIONAL - HIG		2,593,299	13,594,108	0.584	0.685	
09 INSTITUTIONAL - LOW		674,535	3,923,629	0.837	0.982	
12 SERVICE - HIGH		407	5,277	3.794	4.453	
13 SERVICE - LOW		406	1,122	0.000	0.000	
14 CONTRACTORS		509	2,777	0.000	0.000	
TOTAL*		5,496,354	29,214,806	0.826	0.969	
36 MULTILINE SERVICES	01 BUILDINGS	1,424,802	7,290,157	1.025	1.203	
	03 OFFICES	14,509	51,843	0.356	0.418	
	04 MERCANTILE - HIGH	12,669	73,685	0.355	0.417	
	05 MERCANTILE - MEDIUM	2,639	14,786	0.971	1.140	
	06 MERCANTILE - LOW	2,082	21,236	0.000	0.000	
	08 INSTITUTIONAL - HIG	8,477	50,518	0.320	0.376	
	09 INSTITUTIONAL - LOW	20,861	89,943	0.000	0.000	
	11 INDUST-PROC - LOW	4,619	26,381	0.000	0.000	
	12 SERVICE - HIGH	571,903	3,341,624	0.536	0.629	
	13 SERVICE - LOW	340,296	1,844,862	0.654	0.768	
	14 CONTRACTORS	8,895	44,189	1.180	1.385	
	TOTAL*	2,411,752	12,849,224	0.835	0.980	

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SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	
		ACCIDENT YEAR ENDING 09/30/17 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	RELATIVITY	
37 MULTILINE INDUST/PROC	01 BUILDINGS	1,155,715	5,708,071	0.687	0.806	
	03 OFFICES	2,377	9,927	0.000	0.000	
	04 MERCANTILE - HIGH	3,113	17,336	0.307	0.360	
	05 MERCANTILE - MEDIUM	672	5,921	0.000	0.000	
	10 INDUST-PROC - HIGH	110,475	609,915	0.629	0.738	
	11 INDUST-PROC - LOW	711,203	3,893,315	0.969	1.137	
	12 SERVICE - HIGH	2,208	11,566	3.709	4.353	
	13 SERVICE - LOW	746	1,753	3.226	3.786	
	14 CONTRACTORS	278	4,757	0.525	0.616	
	TOTAL*	1,986,787	10,262,561	0.787	0.924	
38 MULTILINE CONTRACTORS	01 BUILDINGS	512,035	2,599,741	0.823	0.966	
	03 OFFICES	11,446	74,538	0.757	0.888	
	04 MERCANTILE - HIGH	31,726	163,008	0.696	0.817	
	05 MERCANTILE - MEDIUM	1,094	4,035	0.000	0.000	
	06 MERCANTILE - LOW	6,626	39,196	0.049	0.058	
	08 INSTITUTIONAL - HIG	0	66	0.000	0.000	
	11 INDUST-PROC - LOW	503	1,004	0.000	0.000	
	12 SERVICE - HIGH	508	1,246	0.000	0.000	
	13 SERVICE - LOW	974	3,802	0.000	0.000	
	14 CONTRACTORS	518,534	2,812,187	1.217	1.428	
	TOTAL*	1,083,446	5,698,823	1.000	1.174	
	TOTAL ALL TOPS*	01 BUILDINGS	10,437,684	52,843,597	0.942	1.106
		02 RES. APTS. AND COND	416,192	2,321,032	0.476	0.559
		03 OFFICES	507,326	2,398,777	0.686	0.805
04 MERCANTILE - HIGH		700,602	3,653,045	0.552	0.648	
05 MERCANTILE - MEDIUM		410,716	2,429,107	0.726	0.852	
06 MERCANTILE - LOW		283,010	1,381,921	1.623	1.905	
07 MOTELS AND HOTELS		26,497	190,026	1.110	1.303	
08 INSTITUTIONAL - HIG		2,642,588	13,988,516	0.580	0.681	
09 INSTITUTIONAL - LOW		751,534	4,399,500	0.881	1.034	
10 INDUST-PROC - HIGH		121,494	674,795	0.584	0.685	
11 INDUST-PROC - LOW		789,919	4,293,196	0.892	1.047	
12 SERVICE - HIGH		599,997	3,555,783	0.569	0.668	
13 SERVICE - LOW		409,602	2,249,120	0.900	1.056	
14 CONTRACTORS		535,480	2,912,622	1.199	1.407	
TOTAL*	18,632,641	97,291,037	0.852	1.000		

* TOTALS IN COLUMNS (3) & (4) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO TABLES 5 AND 6

BASIC GROUP I/SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

INTRODUCTION The experience used in the relativity analysis and displayed in Tables 5 and 6 is the latest five years of accident year data as reported under the Commercial Statistical Plan. As in the overall review, loss costs have been adjusted to current ISO loss cost and prospective amount of insurance levels (with multiline aggregate loss costs adjusted additionally by the current implicit package modification factors). Incurred losses are adjusted to prospective cost levels, and are further adjusted by the Basic Group I large loss procedure and the Special Causes of Loss excess procedure. Losses have also been developed to their ultimate settlement value by application of loss development factors.

COLUMN (1) AGGREGATE LOSS COSTS

The latest year adjusted aggregate loss costs (adjusted as described above) are used as weights both in the calculation of any totals shown in this table and in the iterative formulae used in the simultaneous review procedure.

COLUMN (2) 5 - YEAR AGGREGATE LOSS COSTS

The combined five-year adjusted aggregate loss costs (adjusted as described above) are used to calculate the experience ratios in column (3).

COLUMN (3) FIVE-YEAR EXPERIENCE RATIOS

These are the ratio of the combined five-year adjusted incurred losses (adjusted as described above) to the combined five-year adjusted aggregate loss costs as shown in Column (2). Any totals which are shown are weighted averages using the adjusted aggregate loss costs in Column (1).

COLUMN (4) CREDIBILITY (Z) WEIGHTED EXPERIENCE RATIO

A credibility procedure is applied to the initial experience ratios in column (3) on a cell-by-cell basis prior to the simultaneous review procedure. The credibility values are calculated using an empirical Bayesian credibility procedure. In the following discussion, cell refers to an individual combination of TOP, rating group or category, and territory (where applicable).

EXPLANATORY NOTES TO TABLES 5 AND 6 (Cont'd)

COLUMN (4)
(Cont'd)

The important concept underlying empirical Bayesian credibility is that the credibility should depend both on the overall variation of the group of which the cell is a member, in addition to the variation of the yearly experience ratios for each cell. Therefore, if a cell's data is itself very stable then we would assign a relatively high credibility value, and vice versa.

The empirical Bayesian credibility formula for individual cell credibility is $Z = ((C-3)/C) (P/(P+K)) + (3/C)$. P equals the cell's five-year adjusted aggregate loss costs and C equals the number of unique combinations of rating variables (Territory, TOP and Rating Group/Category) within a class group. The K value is estimated from the underlying data using the empirical Bayes method and varies by TOP group and by territory where applicable. The three TOP groups used in this analysis are: Monoline (TOP 10), Premises (TOP's 31-35), and Operations (TOP's 36-38). The 3/C term corrects for the statistical bias associated with the credibility process. The minimum credibility that is possible is 3/C.

The calculated credibility (Z) is then applied to the five-year experience ratio with the complement of credibility applied to the credibility-weighted average of the individual experience ratios of the group, where group refers to the specified TOP/territory group. In a non-territory state, K values would be determined for the three TOP groups on an entire state basis.

COLUMN (5)

WEIGHTED RELATIVITIES

The relativities are the ratios of the five-year credibility-weighted experience ratios shown in column (4) to the average five-year credibility-weighted experience ratio for all TOP's, rating groups and territories (where applicable) combined. These relativities represent how much better or worse than average the experience for a given cell is. They are used along with the aggregate loss costs in column (1) as input for the simultaneous review procedure.

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TABLE 12 - BASIC GROUP II RELATIVITY ANALYSIS

	(1) ACCIDENT YEAR ENDING 09/30/17 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	(2) ACCIDENT YEARS 2008-2017 EXPER. RATIO AT CURRENT PMF A	(3) FORMULA RELATIVITY (2)/ 1.116	(4) CREDI- BILITY Z C	(5) Z WEIGHTED RELA- TIVITY D	(6) BALANCED FORMULA RELA- TIVITY E	(7) NORMALIZED FORMULA RELA- TIVITY F	(8) INDICATED CHANGE G
MONOLINE	1,775,796	1.203	1.078	0.543	1.042	1.042	1.0468	
MULTILINE	24,719,730	1.097	0.983	0.839	0.986	0.992	0.9971	
COVERAGE	26,495,526	1.116	1.000			0.9954 B	1.0004	
MULTILINE TOP								
31 MOTEL/HOTEL	216,638	2.117	1.897	0.054	1.048	1.054	1.0589	+1.2%
32 APARTMENT	3,036,878	*****	*****	*****	*****	1.042	1.0468	0.0%
33 OFFICE	1,198,294	1.031	0.924	0.190	0.986	0.992	0.9966	-4.8%
34 MERCANTILE	4,891,257	1.119	1.003	0.529	1.002	1.008	1.0127	-3.3%
35 INSTITUTIONAL	8,555,755	1.013	0.908	0.681	0.937	0.943	0.9474	-9.5%
36 SERVICES	3,890,001	1.123	1.006	0.487	1.003	1.009	1.0137	-3.2%
37 INDUST/PROCESS	1,847,380	1.246	1.116	0.304	1.035	1.041	1.0458	-0.1%
38 CONTRACTORS	1,083,527	1.191	1.067	0.215	1.014	1.020	1.0247	-2.1%
	24,719,730	1.097 B	0.983		0.980 B	0.992 B	0.9971 B	

A - TOP 32 IMPLICIT PMF CAPPED AT 1.500.

FOR COLUMNS (2) THROUGH (5), MONOLINE INCLUDES TOPS 32
AT THESE CAPPED LEVELS AND MULTILINE EXCLUDES TOPS 32

B - AVERAGE WEIGHTED BY COLUMN (1)

C - CREDIBILITY = P/(P+K) WHERE P REPRESENTS THE TOTAL 10 YEAR ADJUSTED LOSS COSTS AND K = 45,000,000

D - (5) = (3) * (4) + (1.000 - (4))

E - FOR UNCAPPED MULTILINE TOPS: (6) = (5) * (0.986/0.980)

FOR CAPPED MULTILINE TOPS: (6) = (5) * (1.042) / (8)

F - (7) = (6) / 0.9954

G - (8) = (NORMALIZED RELATIVITY FOR TOP)/(NORMALIZED MONOLINE RELATIVITY(TOP10))-1

EXPLANATORY NOTES TO TABLE 7

BASIC GROUP II RELATIVITY ANALYSIS

OBJECTIVE

The explanations which follow clarify Table 7, the Basic Group II (BG II) relativity analysis. The purpose of this analysis is to:

- (1) determine the monoline loss cost level need;
- (2) determine indicated changes to the eight property Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Basic Group II experience.

COLUMN (1)

AGGREGATE LOSS COSTS

The latest accident year adjusted aggregate loss costs (adjusted in the same manner as in the overall review, i.e. to current manual loss cost and prospective amount of insurance levels, with multiline aggregate loss costs further adjusted to current IPMF level) are used as weights in the calculation of any totals shown in this table.

COLUMN (2)

10 - YEAR EXPERIENCE RATIO

These experience ratios are the ratio of the combined ten year CSP adjusted incurred losses (adjusted to current deductible and prospective cost levels including loss development, and also adjusted to reflect the BGII excess loss procedure) to the combined ten year CSP adjusted aggregate loss costs. Any totals which are shown are weighted averages using the aggregate loss costs in Column (1). When a dash is displayed in the column, it indicates that the indicated IPMF which resulted from this procedure was capped. The procedure which follows when capping occurs is described below.

COLUMN (3)

FORMULA RELATIVITY

The formula relativities are the ratios of the ten year experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year experience ratio for monoline and multiline combined. These relativities represent how much better or worse than average the experience for a given type of policy is. Again, any totals which are shown are weighted averages and the display of a dash indicates that the resulting IPMF was capped.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (3)
(Cont'd)

Unlike the BGI and SCL relativity analyses, the BGII analysis does not employ a simultaneous review procedure since a one way review is involved. That is, the overall loss cost change is only distributed across type of policy; no other rating variables are considered.

COLUMN (4)

CREDIBILITY

The credibility of the experience for each type of policy is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the ten year adjusted aggregate loss costs for a given type of policy, and K is a constant loss cost volume of \$45,000,000.

COLUMN (5)

Z - WEIGHTED RELATIVITY

The weighted relativity is a weighted average of the individual TOP formula relativity and the overall (coverage) formula relativity using credibility and its complement as the respective weights. Therefore, to the extent that the indication for a type of policy is not fully credible, the complement of credibility is assigned to the statewide coverage level change.

COLUMN (6)

BALANCED FORMULA RELATIVITY

The individual multiline weighted relativities are balanced to the multiline weighted relativity level by applying a factor equal to the overall multiline relativity (i.e. the weighted relativity for all multiline combined which is shown on the top of the exhibit directly under the corresponding monoline relativity) divided by the average multiline relativity (i.e. the weighted average of the individual multiline weighted relativities which is shown on the bottom of the exhibit). When the indicated IPMF for a type of policy is capped, the balanced relativity is set equal to the product of the capped IPMF and the monoline balanced formula relativity, divided by the current IPMF.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (7)

NORMALIZED FORMULA RELATIVITY

The normalized relativity is equal to the balanced formula relativity divided by the average monoline/multiline combined relativity. This balances the average monoline/multiline relativity to unity.

COLUMN (8)

INDICATED LOSS COST CHANGES

The indicated multiline (by TOP) changes are calculated by taking the ratio of the TOP relativity (Column 7) to the monoline relativity.

For each type of policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is redone to take this into account. If an IPMF has been capped it is so noted in footnote A.

CRIME AND FIDELITY

The reviews for Burglary and Theft and for Fidelity are done on a multistate basis, combining both multiline and monoline experience. However, unlike other coverages included in a Commercial Package Policy, there is no simultaneous review procedure for either Burglary and Theft or for Fidelity in which separate loss cost level changes can be determined for multiline and monoline experience. In the absence of a simultaneous review procedure, we are unable to determine Type of Policy relativities with which to price CPP policies relative to monoline policies and therefore have assumed a multiline change of 0.0% and thus no change to the historic Crime or Fidelity IPMFs.

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TABLE 8

COMMERCIAL I.M. RELATIVITY ANALYSIS

(1)	(2)	(3)	(4)	(5)
<u>TOP</u>	<u>BALANCED</u>	<u>CURRENT</u>	<u>INDICATED</u>	<u>SELECTED</u>
<u>10</u>	<u>RELATIVITY</u>	<u>IPMF</u>	<u>IPMF*</u>	<u>IPMF</u>
10	1.000	0.910	0.910	0.910
3X & 7X	1.000			

CLASSIFICATION

150	0.923
191	1.100
192	0.785
220	0.789
221	0.755
234	1.202
235	1.088
240	0.789
241	0.715
327	0.757
328	0.932
340	0.646
341	0.757
342	0.751
343	0.767
403	0.640
451	0.946
452	0.778
453	0.811
454	0.713
460	0.479
482	0.889
510	0.662
514	0.631
530	0.628
534	0.757

*COLUMN (4) = COLUMN (3) * (TOP 3X & 7X COLUMN (2) / TOP 10 COLUMN (2))

INDIANA

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u> <u>GROUP</u>	(1)	(2)	(3)	(4)
		2016 AGGREGATE <u>LOSS COSTS</u>	2012 - 2016 <u>AGGREGATE LOSS COSTS</u>	FIVE-YEAR <u>EXP RATIO</u>	<u>RELATIVITY</u>
MONOLINE 10	150	311,633	1,898,096	1.151	1.353
	191	5,446,492	15,816,054	1.032	1.213
	192	862,002	2,760,886	0.627	0.737
	220	5,112	87,903	5.716	6.717
	221	1,491	2,853	1.199	1.409
	234	5,224,155	20,144,072	0.600	0.705
	235	8,439,000	24,407,283	0.761	0.894
	240	928,183	3,685,254	0.656	0.771
	241	15,553	114,739	0.053	0.062
	327	18,917	91,546	0.000	0.000
	328	2,319,887	11,908,665	0.792	0.931
	340	40,688	87,993	0.000	0.000
	341	0	0	0.000	0.000
	342	19,188	65,375	0.555	0.652
	343	589	3,417	343.665	578.925
	403	1,600,852	5,771,545	0.345	0.405
	451	3,309,677	12,953,836	0.855	1.005
	452	34,702	137,467	1.628	1.913
	453	45,575	212,456	3.203	3.764
	454	164,836	745,300	0.734	0.863
	460	790,198	3,687,530	0.415	0.488
	482	839,364	2,841,134	0.986	1.159
	510	3,252	39,977	0.020	0.024
	514	446,469	1,612,361	0.339	0.398
	530	504,434	2,697,004	0.489	0.575
	534	0	0	0.000	0.000
	TOTAL#	31,372,249	111,772,746	0.785	0.922

INDIANA

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u>	(1)	(2)	(3)	(4)
<u>GROUP</u>	<u>LOSS COSTS</u>	<u>2016 AGGREGATE</u>	<u>2012 - 2016</u>	<u>FIVE-YEAR</u>	<u>RELATIVITY</u>
			<u>AGGREGATE LOSS COSTS</u>	<u>EXP RATIO</u>	
MULTILINE ##	150	720,095	3,333,227	0.795	0.934
3X & 7X	191	603,595	2,704,067	0.774	0.910
	192	202,803	783,492	0.826	0.971
	220	6,439	28,512	1.526	1.793
	221	5,606	27,010	0.258	0.303
	234	12,669,443	52,530,286	1.162	1.365
	235	478,171	2,380,353	2.879	3.383
	240	11,651	60,061	1.983	2.330
	241	5,028	15,371	0.019	0.022
	327	2,942	18,862	0.000	0.000
	328	396	2,751	168.726	198.268
	340	32,828	132,609	0.016	0.019
	341	0	0	0.000	0.000
	342	6,082	30,546	0.000	0.000
	343	2,369	7,996	0.000	0.000
	403	479,869	2,417,275	0.739	0.868
	451	95,342	438,635	0.360	0.423
	452	38,096	206,651	0.535	0.629
	453	34,375	104,958	0.147	0.173
	454	228,162	984,183	0.274	0.322
	460	3,613,811	15,118,089	0.318	0.374
	482	127,496	760,961	0.693	0.814
	510	23,290	121,842	0.000	0.000
	514	63,169	300,866	0.073	0.086
	530	1,129,574	4,779,992	0.414	0.486
	534	0	0	0.000	0.000
	TOTAL#	20,580,632	87,288,595	0.952	1.119

REFLECTS CURRENT IPMF OF 0.910.

INDIANA

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u>	(1)	(2)	(3)	(4)
<u>TOTAL ALL TOPS#</u>	<u>GROUP</u>	<u>2016 AGGREGATE</u>	<u>2012 - 2016</u>	<u>FIVE-YEAR</u>	<u>RELATIVITY</u>
		<u>LOSS COSTS</u>	<u>AGGREGATE LOSS COSTS</u>	<u>EXP RATIO</u>	
	150	1,031,728	5,231,323	0.903	1.061
	191	6,050,087	18,520,121	1.006	1.182
	192	1,064,805	3,544,378	0.665	0.781
	220	11,551	116,415	3.380	3.972
	221	7,097	29,863	0.456	0.536
	234	17,893,598	72,674,358	0.998	1.173
	235	8,917,171	26,787,636	0.875	1.028
	240	939,834	3,745,315	0.672	0.790
	241	20,581	130,110	0.045	0.053
	327	21,859	110,408	0.000	0.000
	328	2,320,283	11,911,416	0.821	0.965
	340	73,516	220,602	0.007	0.008
	341	0	0	0.000	0.000
	342	25,270	95,921	0.421	0.495
	343	2,958	11,413	267.552	314.397
	403	2,080,721	8,188,820	0.436	0.512
	451	3,405,019	13,392,471	0.841	0.988
	452	72,798	344,118	1.056	1.241
	453	79,950	317,414	1.889	2.220
	454	392,998	1,729,483	0.467	0.549
	460	4,404,009	18,805,619	0.335	0.394
	482	966,860	3,602,095	0.947	1.113
	510	26,542	161,819	0.002	0.002
	514	509,638	1,913,227	0.306	0.360
	530	1,634,008	7,476,996	0.437	0.514
	534	0	0	0.000	0.000
	TOTAL#	51,952,881	199,061,341	0.851	1.000

TOTAL IN COLUMN (3) IS AN AVERAGE USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO TABLES 8 AND 9

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

EXPERIENCE BASE

The Commercial Inland Marine IPMF review presented in the attached exhibits is based on a review of the latest available five years of monoline and multiline experience through accident year 2016 for all companies reporting data to Insurance Services Office under the Inland Marine Module of the Commercial Statistical Plan (CSP) and the Intermediate Level of the Commercial Minimum Statistical Plan (CMSP).

ADJUSTMENT OF DATA

Aggregate loss costs for each year in the review period have been adjusted to the levels which would have been earned had the current loss costs applied throughout the experience period. Reported premiums are adjusted to current level on an individual policy basis by applying a factor equal to all loss cost level changes that have been implemented subsequent to the policy being written. These adjusted premiums are then converted to a loss cost at current level. In order to eliminate the impact of company deviations from the manual level and individual risk modifications which were in effect at the time the policy was written, aggregate loss costs are further adjusted based on reported Rate Modification and Rate Departure Factors/Loss Cost Multipliers. Multiline aggregate loss costs are further adjusted to the level of the current Implicit Package Modification Factor (IPMF). Incurred losses are loaded for all loss adjustment expenses by applying a factor of 1.105.

RELATIVITY ANALYSIS

For Inland Marine coverage, a multistate IPMF level is determined via a two-way relativity analysis similar to the analysis used in Basic Group I. The experience for all reviewed classes is used to form class group relativities. These relativities for monoline and multiline (all programs combined) are determined through an iterative procedure. The ratio of the multiline relativity to the monoline relativity is multiplied by the current IPMF to yield the indicated IPMF. The indicated IPMF is subject to a minimum value of 0.500 and a maximum value of 1.500. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the premiums for that Type of Policy (i.e., TOP 10 versus TOP 3X) are adjusted to the capped IPMF level, and the entire relativity review is performed again to take this into account.

TABLE 10
INDIANA
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.939	0.238	0.985	0.988	
31	0.925	0.116	0.991	0.994	+0.6%
32	1.269	0.165	1.040	1.043	+5.6%
33	1.172	0.230	1.037	1.040	+5.3%
34	1.033	0.269	1.009	1.012	+2.4%
35	0.859	0.302	0.955	0.958	-3.0%
36	0.900	0.193	0.980	0.983	-0.5%
CLASS GROUP					
01	1.039	0.134	1.005	1.010	
02	1.020	0.190	1.004	1.009	
03	0.851	0.118	0.981	0.986	
04	1.066	0.063	1.004	1.009	
05	0.881	0.037	0.995	1.000	
06	0.699	0.071	0.975	0.980	
07	1.269	0.154	1.037	1.043	
08	0.916	0.050	0.996	1.001	
09	0.936	0.143	0.991	0.996	
10	1.336	0.278	1.084	1.089	
11	0.864	0.180	0.974	0.979	
12	0.846	0.311	0.949	0.954	
13	1.760	0.090	1.052	1.058	
16	1.342	0.106	1.032	1.037	
TERRITORY					
1	1.197	0.247	1.045	1.052	
2	1.006	0.092	1.001	1.007	
4	0.951	0.266	0.987	0.993	
6	0.944	0.460	0.974	0.980	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP)/MONOLINE RELATIVITY (TOP10))-1

TABLE 11
INDIANA
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	1.059	0.227	1.013	1.004	
33	1.144	0.044	1.006	0.996	-0.8%
34	0.964	0.102	0.996	0.987	-1.7%
35	1.472	0.078	1.031	1.021	+1.7%
36	1.017	0.176	1.003	0.993	-1.1%
37	1.036	0.111	1.004	0.994	-1.0%
38	1.042	0.298	1.012	1.003	-0.1%
CLASS GROUP					
30	1.269	0.127	1.031	1.028	
31	1.230	0.206	1.044	1.041	
32	1.125	0.279	1.033	1.031	
33	1.079	0.134	1.010	1.008	
34	0.948	0.151	0.992	0.990	
35	0.352	0.042	0.957	0.955	
36	0.310	0.090	0.900	0.898	
37	0.471	0.061	0.955	0.953	
38	1.008	0.110	1.001	0.998	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP)/MONOLINE RELATIVITY (TOP10))-1

TABLE 12
INDIANA
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TERRITORY	ALL	(1)	(2)	(3)	(4)	(5)	(6)	
		FISCAL A.Y.E. 09/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.	
TYPE OF POLICY	CLASS GROUP							
10 MONOLINE	01 FOOD&BEV. (RETAIL)	\$414,022	\$914,370	1.124		67		
	02 RESTAURANTS	388,272	1,919,482	0.777		109		
	03 STORES	100,513	411,256	0.977		31		
	04 VENDING & RENTAL	15,412	146,508	0.172		2		
	05 FOOD & BEV. DIST.	33,859	148,413	0.346		3		
	06 NON-FOOD&BEV.DIST	87,615	375,404	1.125		25		
	07 CLUBS,AMSMT&SPRTS	315,741	1,566,145	2.120		136		
	08 HEALTH CARE FACIL	17,412	131,045	1.068		3		
	09 HOTELS AND MOTELS	239,931	1,425,361	0.666		108		
	10 SCHLS & CHURCHES	398,738	1,982,285	1.476		80		
	11 APARTMENTS	1,240,513	4,506,743	0.833		121		
	12 BUILDINGS&OFFICES	1,739,135	8,307,345	0.676		279		
	13 MISC. PREMISES	104,183	495,119	1.846		41		
	16 GOVT SUBDIVISIONS	71,858	220,739	0.325		15		
		TOTAL *	\$5,167,204	\$22,550,215	0.936		1,020	
	31 MULT MOTEL/HOTEL	09 HOTELS AND MOTELS	\$925,047	\$3,603,732	0.852		243	
TOTAL *		\$925,047	\$3,603,732	0.852		243		
32 MULT APARTMENT	11 APARTMENTS	\$1,948,196	\$10,350,707	1.109		468		
	12 BUILDINGS&OFFICES	137,132	636,946	0.863		26		
	TOTAL *	\$2,085,328	\$10,987,653	1.093		494		
33 MULT OFFICE	12 BUILDINGS&OFFICES	\$4,357,860	\$20,194,738	0.990		945		
	13 MISC. PREMISES	31,768	119,963	4.510		12		
	TOTAL *	\$4,389,628	\$20,314,701	1.016		957		
34 MULT MERCANTILE	01 FOOD&BEV. (RETAIL)	\$671,520	\$3,869,421	0.935		257		
	02 RESTAURANTS	1,843,338	8,422,232	1.083		546		
	03 STORES	738,438	3,552,114	0.775		174		
	04 VENDING & RENTAL	7,718	44,620	0.997		4		
	05 FOOD & BEV. DIST.	79,743	360,894	1.176		22		
	06 NON-FOOD&BEV.DIST	526,233	2,195,810	0.638		68		
	12 BUILDINGS&OFFICES	1,011,598	5,517,425	0.964		239		
	TOTAL *	\$4,878,588	\$23,962,516	0.945		1,310		

TABLE 12
INDIANA
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TERRITORY	ALL	(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E. 09/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
TYPE OF POLICY	CLASS GROUP						
35 MULT INSTITUT.	07 CLUBS, AMSMT&SPRTS	\$42,346	\$217,990	0.198		12	
	08 HEALTH CARE FACIL	244,946	1,289,557	0.803		43	
	10 SCHLS & CHURCHES	3,237,811	16,621,524	1.108		1,311	
	12 BUILDINGS&OFFICES	118,606	599,564	1.309		94	
	13 MISC. PREMISES	16,228	119,108	0.022		1	
	16 GOVT SUBDIVISIONS	617,742	3,024,389	1.194		190	
	TOTAL *	\$4,277,679	\$21,872,132	1.096		1,651	
36 MULT SERVICES	03 STORES	\$122,889	\$610,624	1.230		47	
	04 VENDING & RENTAL	139,630	699,286	1.038		66	
	07 CLUBS, AMSMT&SPRTS	1,069,398	4,847,072	0.894		283	
	08 HEALTH CARE FACIL	7,647	62,285	0.000		0	
	09 HOTELS AND MOTELS	77,357	410,030	1.624		22	
	10 SCHLS & CHURCHES	7,269	31,591	0.050		1	
	12 BUILDINGS&OFFICES	292,013	1,562,102	1.497		166	
	13 MISC. PREMISES	203,037	976,509	1.180		92	
	TOTAL *	\$1,919,240	\$9,199,499	1.070		677	
	TOTAL ALL	TOP					
	01 FOOD&BEV. (RETAIL)	\$1,085,542	\$4,783,791	1.007		324	
	02 RESTAURANTS	2,231,610	10,341,714	1.030		655	
	03 STORES	961,840	4,573,994	0.854		252	
	04 VENDING & RENTAL	162,760	890,414	0.954		72	
	05 FOOD & BEV. DIST.	113,602	509,307	0.928		25	
	06 NON-FOOD&BEV.DIST	613,848	2,571,214	0.707		93	
	07 CLUBS, AMSMT&SPRTS	1,427,485	6,631,207	1.144		431	
	08 HEALTH CARE FACIL	270,005	1,482,887	0.797		46	
	09 HOTELS AND MOTELS	1,242,335	5,439,123	0.864		373	
	10 SCHLS & CHURCHES	3,643,818	18,635,400	1.146		1,392	
	11 APARTMENTS	3,188,709	14,857,450	1.002		589	
	12 BUILDINGS&OFFICES	7,656,344	36,818,120	0.937		1,749	
	13 MISC. PREMISES	355,216	1,710,699	1.620		146	
	16 GOVT SUBDIVISIONS	689,600	3,245,128	1.103		205	
	TOTAL *	\$23,642,714	\$112,490,448	1.003		6,352	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 13
INDIANA
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E. 09/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	30 SERVICE	\$144,187	\$598,961	1.810	1.859	62	1.032
	31 LIGHT CONTRACTING	351,206	1,741,202	1.651	1.696	206	1.045
	32 MEDIUM CONTRCTING	2,368,442	11,878,453	1.147	1.178	453	1.035
	33 HEAVY CONTRACTING	417,024	2,020,731	1.124	1.154	56	1.011
	34 DEALER OR DISTRIB	607,025	2,498,224	0.527	0.541	42	0.993
	35 LGT. MANUFACTURER	250,164	789,375	0.216	0.222	14	0.958
	36 MED. MANUFACTURER	695,249	3,446,072	0.276	0.284	39	0.901
	37 HVY. MANUFACTURER	236,685	1,010,085	0.772	0.792	11	0.956
	38 MISC. OPERATION	226,337	877,108	1.453	1.493	51	1.002
	TOTAL *	\$5,296,319	\$24,860,211	0.964		934	
33 MULT OFFICE	31 LIGHT CONTRACTING	\$31,986	\$198,081	0.000	0.000	0	1.037
	32 MEDIUM CONTRCTING	8,407	52,563	9.338	9.591	4	1.027
	33 HEAVY CONTRACTING	117,565	612,987	0.634	0.651	12	1.004
	38 MISC. OPERATION	192,705	870,395	1.342	1.379	20	0.995
		TOTAL *	\$350,663	\$1,734,026	1.174		36
34 MULT MERCANTILE	30 SERVICE	\$59,174	\$261,629	1.297	1.332	12	1.015
	32 MEDIUM CONTRCTING	130,817	713,853	0.929	0.954	22	1.017
	34 DEALER OR DISTRIB	719,440	3,958,098	0.830	0.852	123	0.977
	38 MISC. OPERATION	46,778	182,754	2.090	2.147	33	0.985
		TOTAL *	\$956,209	\$5,116,334	0.934		190
35 MULT INSTITUT.	31 LIGHT CONTRACTING	\$21,112	\$92,012	1.351	1.388	5	1.063
	32 MEDIUM CONTRCTING	204,208	990,285	1.654	1.699	107	1.052
		TOTAL *	\$225,320	\$1,082,297	1.626		112
36 MULT SERVICES	30 SERVICE	\$90,531	\$483,285	1.025	1.053	52	1.022
	31 LIGHT CONTRACTING	230,379	1,121,111	1.191	1.223	121	1.034
	32 MEDIUM CONTRCTING	164,825	829,182	0.698	0.717	17	1.024
	33 HEAVY CONTRACTING	85,217	542,972	0.393	0.404	17	1.001
	34 DEALER OR DISTRIB	907,278	4,479,617	1.326	1.362	245	0.983
	36 MED. MANUFACTURER	49,420	206,217	0.114	0.117	5	0.892
	38 MISC. OPERATION	473,407	2,520,432	0.599	0.615	105	0.992
		TOTAL *	\$2,001,057	\$10,182,816	1.004		562

TABLE 13
INDIANA
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E. 09/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
37 MULT INDUST/PROC.	31 LIGHT CONTRACTING	\$1,879	\$8,641	0.072	0.074	1	1.035
	32 MEDIUM CONTRCTING	158,767	826,196	1.296	1.331	25	1.025
	33 HEAVY CONTRACTING	96,804	529,416	0.833	0.855	13	1.002
	34 DEALER OR DISTRIB	42,283	148,851	0.140	0.143	2	0.984
	35 LGT. MANUFACTURER	122,012	677,562	0.657	0.675	18	0.949
	36 MED. MANUFACTURER	1,598,826	7,092,289	0.338	0.347	102	0.893
	37 HVY. MANUFACTURER	1,019,119	4,899,807	0.409	0.420	56	0.948
	38 MISC. OPERATION	16,820	113,862	2.607	2.678	7	0.993
	TOTAL *	\$3,056,510	\$14,296,624	0.449		224	
38 MULT CONTRACTORS	30 SERVICE	\$787,584	\$3,927,434	1.214	1.247	167	1.031
	31 LIGHT CONTRACTING	1,412,201	6,957,817	1.196	1.228	433	1.044
	32 MEDIUM CONTRCTING	3,742,940	18,886,484	1.145	1.176	777	1.034
	33 HEAVY CONTRACTING	1,277,276	6,260,940	1.207	1.239	228	1.010
	38 MISC. OPERATION	29,393	273,350	0.078	0.080	4	1.001
	TOTAL *	\$7,249,394	\$36,306,025	1.169		1,609	
TOTAL ALL TOP	30 SERVICE	\$1,081,476	\$5,271,309	1.282		293	
	31 LIGHT CONTRACTING	2,048,763	10,118,864	1.255		766	
	32 MEDIUM CONTRCTING	6,778,406	34,177,016	1.160		1,405	
	33 HEAVY CONTRACTING	1,993,886	9,967,046	1.103		326	
	34 DEALER OR DISTRIB	2,276,026	11,084,790	0.934		412	
	35 LGT. MANUFACTURER	372,176	1,466,937	0.361		32	
	36 MED. MANUFACTURER	2,343,495	10,744,578	0.315		146	
	37 HVY. MANUFACTURER	1,255,804	5,909,892	0.477		67	
	38 MISC. OPERATION	985,440	4,837,901	1.030		220	
	TOTAL *	\$19,135,472	\$93,578,333	0.974		3,667	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 14
INDIANA
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.908	0.385	0.964	0.961	
34	1.062	0.394	1.024	1.021	+ 6.2%
36	0.945	0.198	0.989	0.986	+ 2.6%
37	1.036	0.541	1.019	1.017	+ 5.8%
CLASS GROUP					
3	0.939	0.535	0.967	0.971	
4	1.062	0.425	1.026	1.029	
5	1.158	0.132	1.020	1.023	
6	0.984	0.341	0.995	0.998	
7	0.957	0.186	0.992	0.995	

* INDICATED CHANGE =
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

NOTE: THE INDICATED CHANGES BY TOP WERE FURTHER ADJUSTED BY THE FOLLOWING
DIFFERENTIALS: TOP 34: 0.976
TOP 36: 0.991
TOP 37: 0.919

TABLE 15
MULTISTATE
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	03 MAN,DLR,DSTFD/DRG	\$21,602,530	\$83,447,793	0.852	0.787	1,581	0.933
	04 DLR,DST-NOTFD/DRG	9,679,270	41,811,675	1.278	1.182	666	0.990
	05 MAN.NTFD/DRG (LOW)	1,692,267	7,299,063	0.767	0.709	64	0.984
	06 MAN.NTFD/DRG (MED)	10,333,678	44,740,395	0.937	0.867	509	0.960
	07 MAN.NTFD/DRG (HGH)	2,805,495	12,365,722	1.011	0.935	148	0.957
	TOTAL *	\$46,113,240	\$189,664,648	0.967		2,968	
34 MULT MERCANTILE	03 MAN,DLR,DSTFD/DRG	\$5,884,889	\$28,782,063	1.470	1.359	936	0.991
	04 DLR,DST-NOTFD/DRG	32,124,091	153,045,789	1.148	1.061	2,174	1.051
	06 MAN.NTFD/DRG (MED)	15,743	64,180	0.000	0.000	0	1.019
	TOTAL *	\$38,024,723	\$181,892,032	1.197		3,110	
36 MULT SERVICES	04 DLR,DST-NOTFD/DRG	\$3,789,140	\$17,974,549	1.089	1.007	780	1.016
	06 MAN.NTFD/DRG (MED)	60,544	302,132	0.755	0.698	8	0.985
	TOTAL *	\$3,849,684	\$18,276,681	1.084		788	
37 MULT INDUST/PROC.	03 MAN,DLR,DSTFD/DRG	\$18,758,762	\$92,830,487	1.011	0.935	3,210	0.987
	05 MAN.NTFD/DRG (LOW)	3,999,375	22,161,197	1.454	1.345	287	1.040
	06 MAN.NTFD/DRG (MED)	30,062,799	137,041,119	1.114	1.030	1,814	1.015
	07 MAN.NTFD/DRG (HGH)	8,087,615	39,304,471	1.047	0.968	549	1.012
	TOTAL *	\$60,908,551	\$291,337,274	1.096		5,860	
TOTAL ALL TOP	03 MAN,DLR,DSTFD/DRG	\$46,246,181	\$205,060,343	0.995		5,727	
	04 DLR,DST-NOTFD/DRG	45,592,501	212,832,013	1.171		3,620	
	05 MAN.NTFD/DRG (LOW)	5,691,642	29,460,260	1.250		351	
	06 MAN.NTFD/DRG (MED)	40,472,764	182,147,826	1.068		2,331	
	07 MAN.NTFD/DRG (HGH)	10,893,110	51,670,193	1.038		697	
	TOTAL *	\$148,896,198	\$681,170,635	1.082		12,726	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 16
INDIANA
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	1.004	0.764	1.003	1.001	
34	1.045	0.588	1.026	1.025	+2.4%
36	1.014	0.533	1.007	1.006	+0.5%
37	0.935	0.146	0.990	0.989	-1.2%
38	0.994	1.000	0.994	0.992	-0.9%
CLASS GROUP					
1	0.852	0.596	0.909	0.903	
2	1.029	0.508	1.015	1.008	
11	1.067	0.341	1.022	1.015	
12	1.022	1.000	1.022	1.015	
13	0.802	0.282	0.940	0.933	

* INDICATED CHANGE =
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

TABLE 16C
MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS *

	(1)	(2)	(3)	(4)
STATE	BAILEY FORMULA RELATIV	CREDIBILITY Z	Z-WTD RELATIV	BALANCED RELATIV.
	1.319	0.399	1.117	1.114
	1.178	0.648	1.112	1.108
	1.137	0.606	1.081	1.078
	1.443	0.200	1.076	1.073
	1.133	0.577	1.075	1.072
	1.174	0.429	1.071	1.068
	1.288	0.243	1.063	1.060
Indiana	1.101	0.442	1.043	1.040
	1.129	0.344	1.043	1.040
	1.093	0.371	1.034	1.031
	1.088	0.381	1.033	1.030
	1.129	0.256	1.032	1.029
	1.206	0.162	1.031	1.028
	1.056	0.508	1.028	1.025
	1.118	0.206	1.023	1.020
	1.126	0.166	1.020	1.017
	1.043	0.224	1.009	1.007
	1.032	0.251	1.008	1.005
	1.004	0.291	1.001	0.998
	1.005	0.228	1.001	0.998
	0.997	0.274	0.999	0.996
	0.968	0.150	0.995	0.992
	0.979	0.474	0.990	0.987
	0.958	0.229	0.990	0.987
	0.966	0.333	0.989	0.986
	0.954	0.247	0.988	0.986
	0.971	0.363	0.989	0.986
	0.886	0.104	0.988	0.985
	0.965	0.336	0.988	0.985
	0.964	0.347	0.987	0.984
	0.955	0.307	0.986	0.983
	0.968	0.428	0.986	0.983
	0.963	0.462	0.983	0.980
	0.773	0.097	0.975	0.972
	0.933	0.385	0.974	0.971
	0.837	0.161	0.972	0.969
	0.933	0.512	0.965	0.963
	0.879	0.281	0.965	0.962
	0.901	0.382	0.961	0.958
	0.831	0.230	0.958	0.956
	0.759	0.166	0.955	0.952
	0.526	0.076	0.952	0.950
	0.757	0.206	0.944	0.941
	0.699	0.168	0.942	0.939
	0.837	0.337	0.942	0.939
	0.474	0.085	0.939	0.936
	0.680	0.164	0.939	0.936
	0.705	0.188	0.936	0.934
	0.849	0.407	0.936	0.933
	0.809	0.350	0.928	0.926
	0.788	0.594	0.868	0.865
	0.731	0.502	0.854	0.852

* Sorted by balanced relative change.

TABLE 17
INDIANA
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	01 RET. STRS-FOOD/DRG	\$34,920	\$177,551	0.665	0.690	19	0.940
	02 RET. STRS-NTFD/DRG	35,602	155,086	1.201	1.246	9	1.050
	11 COMP. OPS. (LOW)	70,099	385,508	2.003	2.078	33	1.058
	12 COMP. OPS. (MED)	1,226,942	6,488,643	1.290	1.338	170	1.058
	13 COMP. OPS. (HGH)	89,525	463,048	0.327	0.339	4	0.972
	TOTAL *	\$1,457,088	\$7,669,836	1.248		235	
34 MULT MERCANTILE	01 RET. STRS-FOOD/DRG	\$133,467	\$613,660	1.228	1.274	81	0.962
	02 RET. STRS-NTFD/DRG	73,262	346,301	1.423	1.476	14	1.075
	12 COMP. OPS. (MED)	45,797	201,732	1.730	1.795	2	1.082
	TOTAL *	\$252,526	\$1,161,693	1.376		97	
36 MULT SERVICES	01 RET. STRS-FOOD/DRG	\$20,618	\$102,194	0.071	0.073	2	0.944
	02 RET. STRS-NTFD/DRG	268,651	1,277,988	2.159	2.240	112	1.054
	11 COMP. OPS. (LOW)	192,785	1,120,754	0.693	0.719	41	1.062
	12 COMP. OPS. (MED)	73,905	516,124	0.511	0.530	24	1.062
	13 COMP. OPS. (HGH)	40,471	206,092	2.290	2.376	3	0.976
	TOTAL *	\$596,430	\$3,223,152	1.418		182	
37 MULT INDUST/PROC.	01 RET. STRS-FOOD/DRG	\$94	\$766	0.000	0.000	0	0.928
	11 COMP. OPS. (LOW)	7,392	35,269	1.741	1.807	2	1.044
	12 COMP. OPS. (MED)	83,853	426,657	0.863	0.896	11	1.044
	13 COMP. OPS. (HGH)	344	5,067	0.000	0.000	0	0.960
	TOTAL *	\$91,683	\$467,759	0.930		13	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$209,043	\$1,057,342	0.332	0.345	15	1.048
	12 COMP. OPS. (MED)	3,902,903	20,472,655	0.967	1.004	508	1.048
	13 COMP. OPS. (HGH)	381,950	1,739,903	1.033	1.072	25	0.963
	TOTAL *	\$4,493,896	\$23,269,900	0.944		548	
TOTAL ALL TOP	01 RET. STRS-FOOD/DRG	\$189,099	\$894,171	0.997		102	
	02 RET. STRS-NTFD/DRG	377,515	1,779,375	1.926		135	
	11 COMP. OPS. (LOW)	479,319	2,598,873	0.743		91	
	12 COMP. OPS. (MED)	5,333,400	28,105,811	1.040		715	
	13 COMP. OPS. (HGH)	512,290	2,414,110	1.008		32	
	TOTAL *	\$6,891,623	\$35,792,340	1.065		1,075	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 18
MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	01 RET. STRS-FOOD/DRG	\$3,182,470	\$12,836,961	0.802		767	
	02 RET. STRS-NTFD/DRG	2,924,031	13,338,270	1.084		529	
	11 COMP. OPS. (LOW)	4,590,082	20,152,490	1.003		479	
	12 COMP. OPS. (MED)	89,807,887	402,728,315	1.020		6,697	
	13 COMP. OPS. (HGH)	9,315,286	47,098,800	0.569		288	
	TOTAL *	\$109,819,756	\$496,154,836	0.977		8,760	
34 MULT MERCANTILE	01 RET. STRS-FOOD/DRG	\$11,273,352	\$48,403,501	0.849		4,326	
	02 RET. STRS-NTFD/DRG	6,296,498	28,377,450	0.986		731	
	12 COMP. OPS. (MED)	2,181,403	11,063,115	1.184		135	
	TOTAL *	\$19,751,253	\$87,844,066	0.930		5,192	
36 MULT SERVICES	01 RET. STRS-FOOD/DRG	\$987,984	\$4,706,764	0.976		241	
	02 RET. STRS-NTFD/DRG	12,294,939	51,500,224	0.993		2,617	
	11 COMP. OPS. (LOW)	3,802,998	17,264,990	1.018		578	
	12 COMP. OPS. (MED)	4,612,981	22,645,594	0.873		739	
	13 COMP. OPS. (HGH)	1,135,617	6,185,367	1.014		99	
	TOTAL *	\$22,834,519	\$102,302,939	0.973		4,274	
37 MULT INDUST/PROC.	01 RET. STRS-FOOD/DRG	\$21,108	\$91,573	4.607		1	
	11 COMP. OPS. (LOW)	147,528	681,634	0.448		17	
	12 COMP. OPS. (MED)	4,476,886	21,707,150	0.929		305	
	13 COMP. OPS. (HGH)	51,521	451,549	0.415		1	
	TOTAL *	\$4,697,043	\$22,931,906	0.925		324	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$9,387,261	\$43,651,462	1.034		677	
	12 COMP. OPS. (MED)	170,776,868	810,357,428	0.965		13,853	
	13 COMP. OPS. (HGH)	17,514,981	81,681,764	0.873		809	
	TOTAL *	\$197,679,110	\$935,690,654	0.960		15,339	
TOTAL ALL TOP	01 RET. STRS-FOOD/DRG	\$15,464,914	\$66,038,799	0.852		5,335	
	02 RET. STRS-NTFD/DRG	21,515,468	93,215,944	1.004		3,877	
	11 COMP. OPS. (LOW)	17,927,869	81,750,576	1.018		1,751	
	12 COMP. OPS. (MED)	271,856,025	1,268,501,602	0.983		21,729	
	13 COMP. OPS. (HGH)	28,017,405	135,417,480	0.777		1,197	
	TOTAL *	\$354,781,681	\$1,644,924,401	0.964		33,889	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

OBJECTIVES

The objectives of this procedure are to:

- 1) determine monoline loss cost level needs for the appropriate rating variables;
- 2) determine indicated changes to the eight liability Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Premises/Operations and Products/Completed Operations data.

EXPERIENCE
BASE

The experience used in this relativity analysis is the latest five (5) years of accident year data, as reported under the Commercial Statistical Plan with aggregate loss costs adjusted to current loss cost level (multiline aggregate loss costs adjusted additionally by the current Implicit Package Modification Factors). Losses have been trended and developed in the Relativity Analysis. ALCCCL have been trended.

SIMULTANEOUS
DETERMINATION
OF RATING
VARIABLE
RELATIVITIES

Once the aggregate loss costs at current level and incurred losses used in the analysis have been appropriately adjusted, the 5-year experience ratios are calculated for each combination of the appropriate rating variables. From these ratios, relativities to the statewide 5-year experience ratio are calculated. These relativities are then used in a minimum bias iterative review procedure, which simultaneously determines the relativities for each rating variable.

The purpose of a simultaneous review procedure is to arrive at a set of relativities for each rating variable that best represent the experience. For example, the type of policy relativities will serve to derive the relationship of CPP policies relative to monoline policies, via the PMF, while the class group and territory (if applicable) relativities will serve to derive the relationship of the various classification and territories relative to one another. An iterative technique is used to derive relativities for each rating variable. This procedure is in contrast to a one-way type of review, wherein relativities for each rating variable would each be reviewed separately.

Such one-way types of review do not take into account differing percentages of experience of each rating variable within the other rating variables. The simultaneous review procedure accounts for these different distributions in generating relativities for each rating variable.

RATING
VARIABLES
USED

For Premises/Operations and Products/Completed Operations, the rating variables used in the relativity analysis are as follows:

Manufacturers and Contractors -	type of policy and class group
Owners, Landlords and Tenants -	type of policy, territory and class group
Products -	type of policy and class group
Local Products/Completed Operations-	type of policy, state and class group

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE
PROCEDURE

The iterative technique referred to in the previous paragraph solves for a set of relativities for each rating variable based on the experience for the cells; that is, based on the experience ratio and latest year adjusted aggregate loss cost volume for each combination of rating variables relative to the experience ratio and adjusted aggregate loss cost volume for all combinations of rating variables combined. Specifically, the iterative procedure uses the following formulas:

For Owners, Landlords and Tenants:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j TER_k} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i TER_k} \quad \text{where } 1 \leq j \leq n$$

$$TER_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \quad \text{where } 1 \leq k \leq p$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

TER_k is the relative change for the k^{th} territory;

W_{ijk} is the aggregate loss costs at current level for the i^{th}

type of policy, j^{th} class group and k^{th} territory;

r_{ijk} is the relative change for the i^{th} type of policy,

j^{th} class group and k^{th} territory;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

p is the number of territories in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Manufacturers and Contractors, and Products:

$$TOP_i = \frac{\sum_j W_{ij} r_{ij}}{\sum_j W_{ij} CG_j} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i W_{ij} r_{ij}}{\sum_i W_{ij} TOP_i} \quad \text{where } 1 \leq j \leq n$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

W_{ij} is the aggregate loss costs at current level for the i^{th}

type of policy and j^{th} class group;

r_{ij} is the relative change for the i^{th} type of policy

and j^{th} class group;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Local Products/Completed Operations:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j ST_k} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i ST_k} \quad \text{where } 1 \leq j \leq n$$

$$ST_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \quad \text{where } 1 \leq k \leq p$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

ST_k is the relative change for the k^{th} state;

W_{ijk} is the aggregate loss costs at current level for the i^{th}

type of policy, j^{th} class group and k^{th} state;

r_{ijk} is the relative change for the i^{th} type of policy,

j^{th} class group and k^{th} state;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

p is the number of states in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE
PROCEDURE
(Cont'd)

For example, for Owners, Landlords and Tenants, the procedure starts by inserting the actual relativities for type of policy and class group into the third formula to get a territory relativity. This result is then used with the class group relativity in the first formula to get a new type of policy relativity, which in turn is substituted along with the territory relativity into the second formula to get a new class group relativity. The process continues on in that fashion until there is no appreciable difference from one iteration to the next.

APPLICATION OF
CREDIBILITY

Consideration is then given to the credibility of the experience for each rating variable. The credibility of each of these categories is based on the formula $Z = \sqrt{P/18,000}$ for Owners, Landlords and Tenants, $Z = \sqrt{P/18,000}$ for Manufacturers and Contractors and $Z = \sqrt{P/20,000}$ for Products, where P is the 5 year occurrence total for a given class group, territory or type of policy. For Local Products/Completed Operations, separate formulas are used to calculate the credibility of the experience for each type of policy and class group versus the credibility of the experience for each state, namely $Z = \sqrt{P/15,000}$ for type of policy and class group, and $Z = \sqrt{P/5,500}$ for state (in this case, P is the 5 year occurrence total for a given state). Credibility-weighted relativities are then calculated as follows:

$$W = R^Z \quad \text{where:}$$

Z is the class group, territory, state or type of policy credibility;

R is the class group, territory, state or type of policy relativity;

W is the credibility-weighted relativity.

The resulting credibility-weighted relativities are then balanced to assure that the average relativity remains at unity.

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

MULTILINE
CONSIDERATIONS

The monoline relativities and the class group, territory (if applicable) and state relativities which result from the aforementioned procedures are then used to generate indicated monoline classification loss cost changes. The multiline relativities are used to generate multiline indications that apply to the current Implicit Package Modification Factors. The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{(\text{monoline relativity})}$$

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account.

COMMERCIAL PACKAGE POLICY

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 PACKAGE MODIFICATION FACTORS

INDIANA (13)

PACKAGE MODIFICATION FACTORS

Package Modification Assignment (PMA)	Premium From CLM Division			
	Two	Three, Four, Five, Eight Property	Four, Six Liability	All Other Divisions
Apartment House	.90	.94	1.00	1.00
Contractors	.90	1.00	.84	1.00
Industrial & Processing	.90	.80	.88	1.00
Institutional	.90	.68	.94	1.00
Mercantile	.90	.97	.94	1.00
Motel/Hotel	.90	1.00	1.00	1.00
Office	.90	.92	1.00	1.00
Service	.90	1.00	.99	1.00

Table 1. Package Modification Factors