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RATE BUREAU
REINSURANCE FACILITY
INSURANCE GUARANTY ASSOCIATION

North Carolina Rate Bureau

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JAN 04 2011

N.C. Dept of Insurance
Property & Casualty

January 4, 2011

Honorable Wayne Goodwin
Commissioner of Insurance
North Carolina Department of Insurance
P. O. Box 26387
Raleigh, North Carolina 27611

Re: Revision of Dwelling Fire and
Extended Coverage Insurance Rates

Dear Sir:

Enclosed herewith for filing on behalf of all member companies of the North Carolina Rate Bureau are revised premium rates and revised territory definitions for dwelling fire and extended coverage insurance subject to the jurisdiction of the North Carolina Rate Bureau.

The enclosed memoranda and exhibits set forth and explain the calculations which support (1) the filed statewide average rate level change of +20.9% for dwelling fire and extended coverage insurance, (2) the filed rate levels varying by territory within the state and (3) the revised territory definitions for dwelling fire and extended coverage insurance, which definitions are the same as the territory definitions for homeowners insurance.

The foregoing changes were calculated based on rates currently in force and reflect consideration, duly given, to data for the experience period set forth herein. Ratios in the filing relating to expense experience were developed from the special calls issued by the Rate Bureau. In preparing this filing, due consideration has been given to the factors specified in G.S. 58-36-10(2).

Information and statistical data required pursuant to G.S. 58-36-15 and 11 NCAC 10.1105 are shown and referenced in Section E. Additionally, the prefiled testimony of (a) Robert J. Curry, Assistant Vice President and Actuary - Insurance Services Office; (b) Shantelle Thomas, Allstate Insurance Company, Chairman, Property Rating Subcommittee; (c) David Lalonde, Senior Vice President - AIR Worldwide Corporation; (d) Dr. James Vander Weide - Fuqua School of Business, Duke University; and (e) Dr. David Appel, Director - Milliman USA are submitted herewith.

We propose that the revised rates and territory definitions become effective according to the following Rule of Application:

> These changes are applicable to all new and renewal policies becoming effective on or after June 1, 2011.

Your approval of these changes is respectfully requested.

Very truly yours,

Raymond F. Evans, Jr. CPCU
General Manager

Enclosures

RFE:dms

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

REVISION OF RATES

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NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SECTION A – SUMMARY OF REVISION

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

Rate Level Summary

Coverage	Premium Weight	Indicated Change	Filed Change
Fire	$ 84,664,174	-6.6%	-6.6%
Extended Coverage	$ 150,823,062	110.3%	36.3% (a)
Total	$ 235,487,236	68.3%	20.9%

(a) Selection of filed rate level change for Extended Coverage is a result of capping as shown on pages C-13 and C-14.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

FILED TERRITORY RATE LEVEL CHANGES BY CLASS

Territory	FIRE		EXTENDED COVERAGE (b)	
Code (a)	Buildings	Contents	Buildings	Contents
05/07	-15.4%	-20.8%	29.9%	35.4%
05/08	0.0%	-12.1%	28.2%	33.7%
06/08	-6.1%	-12.1%	28.2%	33.7%
32	-8.4%	-14.3%	40.4%	46.4%
34	0.4%	-6.0%	46.1%	52.4%
36	-4.0%	-10.1%	40.0%	46.0%
38	-6.7%	-12.7%	54.5%	61.2%
39	-2.7%	-8.9%	47.7%	54.1%
41	4.4%	-2.2%	55.1%	61.7%
42/52	-8.1%	-14.0%	34.6%	40.4%
43/48	-14.8%	-20.2%	39.7%	45.7%
43/49	-11.9%	-17.6%	38.7%	44.6%
43/52	-7.7%	-13.3%	34.6%	40.4%
44	8.4%	1.4%	50.6%	57.1%
45	0.1%	-6.3%	51.4%	57.9%
46	-10.8%	-16.5%	52.7%	59.3%
47	-4.7%	-10.8%	49.5%	55.9%
53	-11.3%	-17.0%	38.5%	44.4%
57	-3.4%	-9.6%	24.0%	29.3%
60	-8.3%	-14.2%	48.3%	54.6%

(a) Territories affected by redefinition (as described in Section F) are listed by both current and revised codes.

(b) Selection of filed rate level changes for Extended Coverage is a result of capping as shown on pages C-13 and C-14.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SECTION B - MATERIAL TO BE IMPLEMENTED

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
CURRENT AND REVISED TERRITORY BASE RATES

FIRE (A)

Territory Code*	CURRENT Buildings	CURRENT Contents	REVISED Buildings	REVISED Contents
05/07	23	8	19	6
05/08	23	8	23	7
06/08	25	8	23	7
32	56	22	51	19
34	55	20	55	19
36	55	20	53	18
38	54	18	50	16
39	43	17	42	15
41	64	22	67	22
42/52	39	15	36	13
43/48	39	15	33	12
43/49	39	15	34	12
43/52	39	15	36	13
44	42	17	46	17
45	50	19	50	18
46	50	19	45	16
47	50	19	48	17
53	41	15	36	12
57	48	18	46	16
60	38	15	35	13

EXTENDED
COVERAGE (B)

Territory Code*	CURRENT Buildings	CURRENT Contents	REVISED Buildings	REVISED Contents
05/07	171	23	222	31
05/08	171	23	219	31
06/08	171	23	219	31
32	25	2	35	3
34	29	2	42	3
36	16	1	22	1
38	14	1	22	2
39	16	1	24	2
41	43	5	67	8
42/52	100	14	135	20
43/48	100	14	140	20
43/49	100	14	139	20
43/52	100	14	135	20
44	24	2	36	3
45	40	4	61	6
46	28	2	43	3
47	35	3	52	5
53	25	2	35	3
57	21	1	26	1
60	20	2	30	3

(A) Base Class is Protection Class 5, Frame Construction; $15,000 Coverage A, $6,000 Coverage C.
(B) Base Class is Form DP-001; $15,000 Coverage A, $6,000 Coverage C.

* Territories affected by redefinition (as described in Section F) are listed by both current and revised codes.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

DETERMINATION OF RATES TO BE CHARGED INDIVIDUAL INSUREDS

The filed base rates by territory are shown on page B-1. These are the filed manual rates for the classification carrying a unity differential. The revised rates for the remaining classifications are determined by applying the established classification rate differentials to the base rates by territory.

WINDSTORM OR HAIL EXCLUSION – TERRITORIES 07, 08, 48, 49 AND 52 ONLY

Territory 07

B.2. Building Credit	[$149]	204
Contents Credit	[$20]	27

Territory 08

B.2. Building Credit	[$149]	198
Contents Credit	[$20]	27

Territory 48

B.2. Building Credit	[$78]	119
Contents Credit	[$11]	17

Territory 49

B.2. Building Credit	[$78]	121
Contents Credit	[$11]	17

Territory 52

B.2. Building Credit	[$78]	110
Contents Credit	[$11]	16

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SECTION C - SUPPORTING MATERIAL

NORTH CAROLINA DWELLING FIRE
CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE

	(1) Adjusted Incurred Losses (a)	(2) Adjusted Incurred Losses Including LAE (b)	(3) Current Cost/Amount Factor (c)	(4) Earned House Years
2003	33,080,282	35,726,705	0.948	542,271
2004	31,606,410	34,134,923	0.925	539,022
2005	35,338,295	38,165,359	0.919	554,597
2006	34,060,569	36,785,415	0.921	565,036
2007	39,662,750	42,835,770	0.942	570,959

	(5) Trended Loss Cost (2) *(3)*CPF/(4) (d)	(6) Average Rating Factor (e)	(7) Trended Base Loss Cost	(8) Weights
2003	64.46	3.547	18.17	0.10
2004	60.45	3.649	16.57	0.15
2005	65.27	3.844	16.98	0.20
2006	61.88	4.040	15.32	0.25
2007	72.93	4.179	17.45	0.30

(9)	Weighted Trended Base Loss Cost (f)	16.76
(10)	Credibility (2,771,885 House Years)	1.00
(11)	Fixed Expense per Policy (g)	4.53
(12)	Loss and Fixed Expense, (9) + (11)	21.29
(13)	Expected Loss and Fixed Expense Ratio (h)	0.716
(14)	Net Base Rate per Policy, (12) / (13)	29.73
(15)	Compensation for Assessment Risk per Policy (i)	2.30
(16)	Base Rate Excluding Deviations, (14) + (15)	32.03
(17)	Deviation (j)	0.038
(18)	Deviation Amount per Policy, (16) / (1.0 - (17)) - (16)	1.27
(19)	Required Base Rate per Policy, (16) + (18)	33.30
(20)	Current Base Rate	35.66
(21)	Indicated Rate Level Change, (19) / (20) - 1	-6.6%

NORTH CAROLINA

DWELLING FIRE INSURANCE

STATEWIDE RATE REVIEW

(a) Incurred losses have been adjusted by the following loss development factors:

Year Ended	Loss Development Factor
12/31/03	1.000
12/31/04	1.000
12/31/05	0.999
12/31/06	0.997
12/31/07	0.990

(b) The trended loss adjustment expenses have been calculated to be 8.0% of the incurred losses for Fire. This factor is developed on page D-26 and D-29.

(c) The development of Current Cost/Amount Factors is shown on page D-18.

(d) The development of the Composite Projection Factor is shown on pages D-19.

(e) The Average Rating Factor is the ratio of average rate at current manual level and average current base rate.

(f) The weighted trended loss cost is the sum of the products, by year, of the trended loss costs and the accident year weights.

(g) The development of fixed expense per policy is shown on page D-29.

(h) The development of the expected loss and fixed expense ratio is shown on page D-25.

(i) Compensation for Assessment Risk is the provision for the potential residual market assessment. (See testimony of D. Appel.)

(j) The anticipated deviation of 3.8% was selected by the North Carolina Rate Bureau. (See page D-33 and testimony of S. Thomas, R. Curry, and D. Appel.)

NORTH CAROLINA DWELLING EXTENDED COVERAGE
CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE

	(1) Non-Modeled Adjusted Incurred Losses (a)*	(2) Non-modeled Adjusted Excess Losses (b)	(3) Losses including LAE Adjusted for Excess = [(1)-(2)] * LAE Excess Factor (c) (d)	(4) Current Cost/Amount Factor (e)	(5) Earned House Years
2003	21,064,594	0	24,416,266	0.979	549,223
2004	16,296,123	0	18,889,064	0.940	546,462
2005	16,864,044	0	19,547,349	0.922	554,068
2006	18,555,078	0	21,507,451	0.925	562,984
2007	21,133,592	0	24,496,242	0.945	568,016

	(6) Trended Loss Cost (3) *(4)*CPF/(5) (f)	(7) Average Rating Factor (g)	(8) Trended Base Loss Cost (6) / (7)	(9) Weights
2003	45.57	6.001	7.59	0.20
2004	34.02	6.162	5.52	0.20
2005	34.06	6.472	5.26	0.20
2006	37.00	7.017	5.27	0.20
2007	42.67	7.367	5.79	0.20

(10)	Weighted Trended Base Loss Cost (h)	5.89
(11)	Credibility (2,780,753 House Years)	1.00
(12)	Modeled Base Class Loss Cost (i)	20.25
(13)	Total Base Class Loss Cost,(10) + (12)	26.14
(14)	Fixed Expense per Policy (j)	3.91
(15)	Loss and Fixed Expense,(12) + (14)	30.05
(16)	Expected Loss and Fixed Expense Ratio (k)	0.754
(17)	Net Base Rate per Policy, (15) / (16)	39.86
(18)	Compensation for Assessment Risk per Policy (l)	2.21
(19)	Net Cost of Reinsurance Per Policy	31.57
(20)	Base Rate Excluding Deviations, (17) + (18) + (19)	73.64
(21)	Deviation (m)	0.024
(22)	Deviation Amount per Policy, (20) / (1.0 - (21)) - (20)	1.81
(23)	Required Base Rate per Policy, (20) + (22)	75.45
(24)	Current Base Rate	35.87
(25)	Indicated Rate Level Change, (23) / (24) - 1	110.3%

* Actual Hurricane losses of $48,403,352 were removed from 2003, $12,041,861 were removed from 2004, $11,887,972 were removed from 2005, and $2,040,795 were removed from 2006.

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

STATEWIDE RATE REVIEW

(a) Incurred losses excluding hurricane have been adjusted by the following loss development factors:

Year Ended	Loss Development Factor
12/31/03	1.002
12/31/04	1.005
12/31/05	1.008
12/31/06	1.018
12/31/07	1.036

(b) Excess losses are calculated on page D-31.

(c) The trended loss adjustment expenses have been calculated to be 12.1% of the incurred losses for Extended Coverage. This factor is developed on pages D-28 and D-29.

(d) The excess factor is calculated on page D-30.

(e) The development of Current Cost/Amount Factors is shown on page D-21.

(f) The development of the Composite Projection Factor is shown on pages D-22.

(g) The Average Rating Factor is the ratio of average rate at current manual level and average current base rate.

(h) The weighted trended loss cost is the sum of the products, by year, of the trended loss costs and the accident year weights.

(i) The modeled hurricane base class loss cost is calculated by dividing modeled losses of $76,404,513 by the product of latest year earned house years and average rating factor, and is then adjusted for trend and LAE. Modeled losses are developed by AIR Worldwide based on the distribution of latest year exposures. These losses are shown on page D-32.

(j) The development of fixed expense per policy is shown on page D-29.

(k) The development of the expected loss and fixed expense ratio is shown on page D-27.

(l) Compensation for Assessment Risk is the provision for the potential residual market assessment. (See testimony of D. Appel.)

(m) The anticipated deviation of 2.4% was selected by the North Carolina Rate Bureau. (See page D-33 and the testimony of S. Thomas, R. Curry, and D. Appel.)

NORTH CAROLINA DWELLING FIRE
CALCULATION OF INDICATED BUILDINGS/CONTENTS CLASS CHANGES

Class	(1) Trended Adjusted Incurred Losses	(2) Five Year House Years	(3) Trended Average Rating Factor	(4) Base Loss Cost (1) / [(2) * (3)]	(5) Credibility
Buildings	200,903,680	1,952,336	5.313	19.37	1.00
Contents	12,545,679	819,549	2.401	6.38	1.00
Total	213,449,359	2,771,885	4.932	15.61	

Class	(6) Credibility Weighted Loss Cost	(7) Indicated Base Loss Cost (a)	(8) Current Base Rate	(9) Expected Loss and Fixed Expense Ratio	(10) Indicated Net Base Rate (b)
Buildings	19.37	20.80	43.97	0.716	36.85
Contents	6.38	6.85	15.88	0.716	12.38
Total	15.61	16.76	35.66	0.716	29.73

Class	(11) Compensation for Assessment Risk Per Policy	(12) Base Rate Excluding Deviations (10) + (11)	(13) Deviation	(14) Deviation Amount (12) / [1.0 - (13)] -(12)	(15) Required Base Rate (12) + (14)
Buildings	2.84	39.69	0.038	1.57	41.26
Contents	1.03	13.41	0.038	0.53	13.94
Total	2.30	32.03	0.038	1.27	

Class	(16) Indicated Base Rate Change (15) / (8) - 1	(17) Indicated Rate Change Balanced to Statewide Level (c)
Buildings	-6.2%	-6.2%
Contents	-12.2%	-12.2%
Total	-6.6%	-6.6%

Note: (a). Column (7) = (6) row / (6) total * Statewide Indication page column (9).
(b). Column (10) = [(7) + (8) * Trended fixed expense ratio] / (9). Trended fixed expense ratio is shown on page D-29.
(c). Column (17) = [1 + (16)] / [1 + (16) total] * (1 + Statewide indicated rate level change) - 1

NORTH CAROLINA DWELLING EXTENDED COVERAGE
CALCULATION OF INDICATED BUILDINGS/CONTENTS CLASS CHANGES

Class	(1) Trended Adjusted Incurred Non-Modeled Losses	(2) Five Year House Years	(3) Trended Average Rating Factor	(4) Base Loss Cost = (1) / [(2) * (3)]	(5) Credibility
Buildings	113,078,176	1,950,877	8.699	6.66	1.00
Contents	2,802,692	829,876	3.160	1.07	1.00
Total	115,880,868	2,780,753	8.318	5.01	

Class	(6) Credibility Weighted Loss Cost	(7) Modeled Base Loss Cost	(8) Total Loss Cost	(9) Indicated Base Loss Cost (a)	(10) Current Base Rate
Buildings	6.66	24.08	30.74	34.82	47.72
Contents	1.07	4.36	5.43	6.15	8.02
Total	5.01	18.07	23.08	26.14	35.87

Class	(11) Expected Loss and Fixed Expense Ratio	(12) Indicated Net Base Rate (b)	(13) Compensation for Assessment Risk Per Policy	(14) Net Cost of Reinsurance Per Policy	(15) Base Rate Excluding Deviations (12)+(13)+(14)
Buildings	0.754	53.08	2.94	41.98	98.00
Contents	0.754	9.32	0.49	7.37	17.18
Total	.0.754	39.85	2.21	31.57	73.63

Class	(16) Deviation	(17) Deviation Amount (10) / [1.0 - (11)] -(10)	(18) Required Base Rate (10) + (12)	(19) Indicated Base Rate Change (13) / (8) - 1	(20) Indicated Rate Change Balanced to Statewide Level (c)
Buildings	0.024	2.41	100.41	110.4%	110.1%
Contents	0.024	0.42	17.60	119.4%	119.1%
Total	0.024	1.81		110.6%	110.3%

Note: (a). Column (9) = (8) row / (8) total * Statewide Indication page column (13).
(b). Column (12) = [(9) + (10) * Trended fixed expense ratio] / (11). Trended fixed expense ratio is shown on page D-29.
(c). Column (20) = [1 + (19)] / [1 + (19) total] * (1 + Statewide indicated rate level change) - 1

NORTH CAROLINA DWELLING FIRE
CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES

Territory	(1) Latest Year Earned Premium at Current Level	(2) Current Average Base Rate	(3) Five Year Experience Base Loss Cost	(4) Five Year House Years	(5) Credibility	(6) Credibility Weighted Base Loss Cost (a)	(7) Indicated Statewide Base Loss Cost	(8) Indicated Base Loss Cost Terr (6) / SW (6) * (7)	(9) Trended Gen./O.A Expense Ratio	(10) Trended Loss and Fixed Expense (8) + (9) * (2)
7	4,374,141	15.98	5.28	124,600	0.40	6.48	16.76	6.72	0.113	8.53
8	3,462,264	16.80	6.36	141,809	0.50	7.01	16.76	7.27	0.164	10.03
32	3,248,498	46.95	22.25	82,931	0.40	21.74	16.76	22.55	0.101	27.29
34	3,011,177	45.41	25.07	104,269	0.40	22.45	16.76	23.28	0.129	29.14
36	2,770,489	47.43	24.14	81,533	0.40	22.63	16.76	23.47	0.117	29.02
38	3,605,679	45.16	22.37	87,182	0.40	21.30	16.76	22.09	0.104	26.79
39	3,698,173	38.15	20.61	106,567	0.40	18.68	16.76	19.37	0.113	23.68
41	4,120,529	47.82	28.57	138,777	0.50	25.19	16.76	26.13	0.123	32.01
44	878,474	34.33	22.80	41,095	0.20	17.08	16.76	17.71	0.180	23.89
45	5,372,752	40.53	20.51	190,718	0.60	19.70	16.76	20.43	0.136	25.94
46	2,270,360	41.79	17.45	59,151	0.30	18.57	16.76	19.26	0.104	23.61
47	7,633,125	41.29	19.22	262,387	0.70	19.10	16.76	19.81	0.127	25.05
48	977,959	30.94	10.42	30,814	0.50	12.26	16.76	12.72	0.127	16.65
49	3,015,531	30.94	10.42	109,125	0.50	12.26	16.76	12.72	0.146	17.24
52	6,565,548	30.55	11.85	264,314	0.70	12.48	16.76	12.94	0.160	17.83
53	3,576,573	34.23	13.82	102,208	0.40	14.89	16.76	15.44	0.110	19.21
57	5,442,095	42.07	20.34	189,350	0.60	19.88	16.76	20.62	0.125	25.88
60	20,640,807	32.10	14.16	655,055	1.00	14.16	16.76	14.69	0.124	18.67
Statewide:	84,664,174	35.66	16.26	2,771,885		16.16			0.127	

Note: (a). Column (6) = (5) * (3) + [1.00 - (5)] * (3) statewide * (2) / (2) statewide

NORTH CAROLINA DWELLING FIRE
CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES

Territory	(11) Expected Loss Ratio	(12) Indicated Net Base Rate (10) / (11)	(13) Compensation for Assessment Risk Per Policy	(14) Base Rate Excluding Deviations (12) + (13)	(15) Deviation	(16) Dollar Deviation Per Exposure (14) / (1.0 - (15)) - (14)	(17) Indicated Required Base Rate (14) + (16)	(18) Indicated Rate Level Change (17) / (2) - 1	(19) Indicated Rate Level Change Balanced to Statewide Indicated Level (b)	(20) Indicated Buildings Rate Level Change (c)	(21) Indicated Contents Rate Level Change (d)
7	0.716	11.91	1.03	12.94	0.038	0.51	13.45	-15.8%	-15.7%	-15.4%	-20.8%
8	0.716	14.01	1.08	15.09	0.038	0.60	15.69	-6.6%	-6.5%	-6.1%	-12.1%
32	0.716	38.11	3.03	41.14	0.038	1.63	42.77	-8.9%	-8.8%	-8.4%	-14.3%
34	0.716	40.70	2.93	43.63	0.038	1.72	45.35	-0.1%	0.0%	0.4%	-6.0%
36	0.716	40.53	3.06	43.59	0.038	1.72	45.31	-4.5%	-4.4%	-4.0%	-10.1%
38	0.716	37.42	2.92	40.34	0.038	1.59	41.93	-7.2%	-7.1%	-6.7%	-12.7%
39	0.716	33.07	2.46	35.53	0.038	1.40	36.93	-3.2%	-3.1%	-2.7%	-8.9%
41	0.716	44.71	3.09	47.80	0.038	1.89	49.69	3.9%	4.0%	4.4%	-2.2%
44	0.716	33.37	2.22	35.59	0.038	1.41	37.00	7.8%	7.9%	8.4%	1.4%
45	0.716	36.23	2.62	38.85	0.038	1.53	40.38	-0.4%	-0.3%	0.1%	-6.3%
46	0.716	32.97	2.70	35.67	0.038	1.41	37.08	-11.3%	-11.2%	-10.8%	-16.5%
47	0.716	34.99	2.67	37.66	0.038	1.49	39.15	-5.2%	-5.1%	-4.7%	-10.8%
48	0.716	23.25	2.00	25.25	0.038	1.00	26.25	-15.2%	-15.1%	-14.8%	-20.2%
49	0.716	24.08	2.00	26.08	0.038	1.03	27.11	-12.4%	-12.3%	-11.9%	-17.6%
52	0.716	24.90	1.97	26.87	0.038	1.06	27.93	-8.6%	-8.5%	-8.1%	-14.0%
53	0.716	26.83	2.21	29.04	0.038	1.15	30.19	-11.8%	-11.7%	-11.3%	-17.0%
57	0.716	36.15	2.72	38.87	0.038	1.54	40.41	-3.9%	-3.8%	-3.4%	-9.6%
60	0.716	26.08	2.07	28.15	0.038	1.11	29.26	-8.8%	-8.7%	-8.3%	-14.2%
Statewide:	0.716							-6.7%	-6.6%	-6.2%	-12.2%

Note: (b). Column (19) = [1 + (18)] / [1 + (18) statewide] * (1 + Statewide indicated rate level change) - 1
(c). Column (20) = [1 + (19)] * [1 + Class page (17) Buildings] / [1 + Class page (17) total] - 1
(d). Column (21) = [1 + (19)] * [1 + Class page (17) Contents] / [1 + Class page (17) total] - 1

NORTH CAROLINA DWELLING EXTENDED COVERAGE
CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES

Terr.	(1) Latest Year Earned Premium at Current Level	(2) Current Average Base Rate	(3) Five Year Non-Modeled Experience Base Loss Cost	(4) Five Year House Years	(5) Cred.	(6) Credibility Weighted Base Loss Cost (a)	(7) Modeled Hurricane Base Loss Cost	(8) Total Base Loss Cost (6) + (7)	(9) Indicated Statewide Base Loss Cost	(10) Indicated Base Loss Cost Terr (8) / SW (8) * (9)	(11) Trended Gen./O.A Expense Ratio	(12) Trended Loss and Fixed Expense (10) + (11) * (2)
7	35,568,630	101.42	5.44	134,354	0.60	5.31	62.43	67.74	26.14	75.84	0.022	78.07
8	32,480,528	102.33	4.41	155,388	0.60	4.69	77.29	81.98	26.14	91.78	0.028	94.65
32	3,036,490	19.01	5.65	80,707	0.40	5.33	3.30	8.63	26.14	9.66	0.162	12.74
34	3,540,333	21.55	4.28	109,746	0.50	4.70	5.66	10.36	26.14	11.60	0.178	15.44
36	1,671,452	12.89	5.04	77,031	0.40	5.09	1.86	6.95	26.14	7.78	0.279	11.38
38	2,041,368	10.95	5.67	83,221	0.50	5.40	1.69	7.09	26.14	7.94	0.254	10.72
39	2,321,615	13.37	6.45	105,322	0.50	5.79	2.05	7.84	26.14	8.78	0.278	12.50
41	2,861,935	28.41	5.07	138,517	0.60	5.09	14.88	19.97	26.14	22.36	0.274	30.14
44	583,434	17.32	6.45	40,278	0.30	5.52	4.08	9.60	26.14	10.75	0.417	17.97
45	5,126,198	28.96	6.77	187,805	0.70	6.28	11.51	17.79	26.14	19.92	0.227	26.49
46	1,062,403	21.14	3.96	58,459	0.40	4.66	3.67	8.33	26.14	9.33	0.291	15.48
47	6,816,657	26.02	5.12	260,274	0.80	5.12	6.26	11.38	26.14	12.74	0.226	18.62
48	2,646,447	69.88	5.77	32,505	0.70	5.58	37.66	43.24	26.14	48.41	0.077	53.79
49	8,160,309	69.88	5.77	115,113	0.70	5.58	20.54	26.12	26.14	29.24	0.089	35.46
52	22,554,637	68.41	3.54	290,279	0.90	3.70	48.44	52.14	26.14	58.37	0.079	63.77
53	3,411,764	19.08	4.18	99,133	0.50	4.65	3.61	8.26	26.14	9.25	0.176	12.61
57	3,888,285	17.10	5.90	178,550	0.70	5.67	2.33	8.00	26.14	8.96	0.253	13.29
60	13,050,576	15.48	7.60	634,071	1.00	7.60	1.27	8.87	26.14	9.93	0.296	14.51
Statewide:	150,823,062	35.87	5.12	2,780,753		5.09		23.35			0.110	

Note: (a). Column (6) = (5) * (3) + [1.00 - (5)] * (3) statewide

NORTH CAROLINA DWELLING EXTENDED COVERAGE
CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES

Terr.	(13) Expected Loss and Fixed Expense Ratio	(14) Indicated Net Base Rate (12) / (13)	(15) Compensation for Assessment Risk Per Policy	(16) Net Cost of Reinsurance per Policy	(17) Base Rate Excluding Deviations (14) + (15) + (16)	(18) Deviation	(19) Dollar Deviation Per Exposure (17) / (1.0 - (18)) - (17)	(20) Indicated Required Base Rate (17) + (19)	(21) Indicated Rate Level Change (20) / (2) - 1	(22) Indicated Rate Level Change Balanced to Statewide Indicated Level (b)	(23) Indicated Buildings Rate Level Change (c)	(24) Indicated Contents Rate Level Change (d)
7	74.4%	104.93	6.26	101.60	212.79	0.024	5.23	218.02	115.0%	119.5%	119.2%	128.6%
8	74.4%	127.22	6.31	123.18	256.71	0.024	6.31	263.02	157.0%	162.4%	162.1%	173.4%
32	78.5%	16.23	1.17	8.13	25.53	0.024	0.63	26.16	37.6%	40.5%	40.4%	46.4%
34	78.5%	19.67	1.33	9.85	30.85	0.024	0.76	31.61	46.7%	49.8%	49.6%	56.0%
36	80.9%	14.07	0.80	2.40	17.27	0.024	0.42	17.69	37.3%	40.1%	40.0%	46.0%
38	80.9%	13.25	0.68	2.26	16.19	0.024	0.40	16.59	51.5%	54.7%	54.5%	61.2%
39	80.9%	15.45	0.82	2.64	18.91	0.024	0.46	19.37	44.9%	47.9%	47.7%	54.1%
41	78.5%	38.39	1.75	19.23	59.37	0.024	1.46	60.83	114.1%	118.6%	118.4%	127.7%
44	78.5%	22.89	1.07	11.47	35.43	0.024	0.87	36.30	109.6%	113.9%	113.7%	122.9%
45	78.5%	33.75	1.79	16.90	52.44	0.024	1.29	53.73	85.5%	89.4%	89.2%	97.3%
46	78.5%	19.72	1.30	9.88	30.90	0.024	0.76	31.66	49.8%	52.9%	52.7%	59.3%
47	78.5%	23.72	1.61	11.88	37.21	0.024	0.92	38.13	46.6%	49.6%	49.5%	55.9%
48	74.4%	72.30	4.31	70.00	146.61	0.024	3.61	150.22	115.0%	119.5%	119.3%	128.6%
49	74.4%	47.66	4.31	46.15	98.12	0.024	2.41	100.53	43.9%	46.9%	46.7%	53.0%
52	74.4%	85.71	4.22	82.99	172.92	0.024	4.25	177.17	159.0%	164.4%	164.1%	175.4%
53	78.5%	16.06	1.18	8.05	25.29	0.024	0.62	25.91	35.8%	38.6%	38.5%	44.4%
57	80.9%	16.43	1.06	2.81	20.30	0.024	0.50	20.80	21.6%	24.1%	24.0%	29.3%
60	80.9%	17.94	0.96	3.06	21.96	0.024	0.54	22.50	45.4%	48.4%	48.3%	54.6%
Statewide	76.1%								106.0%	110.3%	110.1%	119.1%

Note: (b). Column (22) = [1 + (21)] / [1 + (21) statewide] * (1 + Statewide indicated rate level change) - 1
(c). Column (23) = [1 + (22)] * [1 + Class page (20) Buildings] / [1 + Class page (20) total] - 1
(d). Column (24) = [1 + (22)] * [1 + Class page (20) Contents] / [1 + Class page (20) total] - 1

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

DERIVATION OF WIND EXCLUSION CREDITS

The filed wind exclusion credits, Page B-2, are based on the following formula:

$$C = I - \frac{\dfrac{Ld + F}{(1 - V)R} \quad X \quad i \quad + \quad dB}{(1 - D)}$$

C = indicated credit

I = indicated rate

F = provision in filed rates for fixed expenses (territory trended fixed expense ratio divided by the filed territory buildings or contents rate level change)

V = provision in filed rates for variable expenses

R = territory risk load factor = (1 - statewide variable expense loading) / (1-V). The statewide variable expense loading is 24.6%.

r = net cost of reinsurance expressed as a ratio

L = provision in filed rates for losses and loss adjustment expense = 1.0 – V – F – r

d = percentage of losses remaining after wind losses are excluded

i = indicated rate excluding compensation for assessment risk and deviations

B = compensation for assessment risk

D = deviation loading

The d values used in this calculation are obtained by the following formula:

$$d = \frac{N}{N + W}, \text{ where}$$

N = 5-year average annual non-wind losses

W = X + Y, where
X = 2007 modeled hurricane losses; and
Y = 5-year average annual non-hurricane wind losses

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

DERIVATION OF WIND EXCLUSION CREDITS

The following displays the variables described above and the indicated credit, C:

	Territory 07		Territory 08		Territory 48		Territory 49		Territory 52	
	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
C	$356.79	$48.95	$427.18	$59.48	$198.29	$29.05	$129.38	$18.33	$239.43	$35.31
I	$375	$53	$448	$63	$219	$32	$147	$21	$264	$39
F	0.017	0.016	0.022	0.021	0.055	0.053	0.064	0.062	0.059	0.056
V	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256
R	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013
r	0.366	0.366	0.366	0.366	0.366	0.366	0.366	0.366	0.366	0.366
L	0.361	0.362	0.356	0.357	0.323	0.325	0.314	0.316	0.319	0.322
d	0.054	0.114	0.037	0.059	0.053	0.053	0.088	0.103	0.038	0.052
i	$355.37	$49.94	$427.01	$60.00	$207.82	$30.40	$137.00	$20.04	$251.66	$36.81
B	$10.55	$1.42	$10.55	$1.42	$6.17	$0.86	$6.17	$0.86	$6.17	$0.86
D	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024

The following calculation adjusts the indicated credit to reflect the filed rate.

	Territory 07		Territory 08		Territory 48		Territory 49		Territory 52	
	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
(1) Indicated Credit	$357	$49	$427	$59	$198	$29	$129	$18	$239	$35
(2) Indicated Base Rate	$375	$53	$448	$63	$219	$32	$147	$21	$264	$39
(3) Indicated Non-Wind Base Rate (2) - (1)	$18	$4	$21	$4	$21	$3	$18	$3	$25	$4
(4) Filed Base Rate	$222	$31	$219	$31	$140	$20	$139	$20	$135	$20
(5) Filed Credit (4) - (3)	$204	$27	$198	$27	$119	$17	$121	$17	$110	$16

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

SELECTION OF RATE LEVEL CHANGES

In order to mitigate the effects of large rate changes on policyholders, the Governing Committee selected a maximum combined Fire/Extended Coverage rate change of 25% for each territory as follows:

- For each territory, the Fire change was selected equal to the indicated change.
- In territories where the combined Fire/Extended Coverage indicated change was less than 25%, the Extended Coverage change was also selected equal to the indicated change.
- In territories where the combined Fire/Extended Coverage indicated change was greater than 25%, the Extended Coverage change was selected such that the combined Fire/Extended Coverage change equaled 25%.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

CALCULATION OF COMBINED TERRITORY RATE LEVEL CHANGES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Fire			Extended Coverage		Combined	
Terr.	Latest Year Earned Premium at Current Level	Indicated Territory Rate Level Change	Selected Territory Rate Level Change	Latest Year Earned Premium at Current Level	Indicated Territory Rate Level Change	Selected Territory Rate Level Change	Indicated Territory Rate Level Change	Capped at: 25% Selected Territory Rate Level Change
07	4,374,141	-15.7%	-15.7%	35,568,630	119.5%	30.0%	104.7%	25.0%
08	3,462,264	-6.5%	-6.5%	32,480,528	162.4%	28.4%	146.1%	25.0%
32	3,248,498	-8.8%	-8.8%	3,036,490	40.5%	40.5%	15.0%	15.0%
34	3,011,177	0.0%	0.0%	3,540,333	49.8%	46.3%	26.9%	25.0%
36	2,770,489	-4.4%	-4.4%	1,671,452	40.1%	40.1%	12.3%	12.3%
38	3,605,679	-7.1%	-7.1%	2,041,368	54.7%	54.7%	15.2%	15.2%
39	3,698,173	-3.1%	-3.1%	2,321,615	47.9%	47.9%	16.6%	16.6%
41	4,120,529	4.0%	4.0%	2,861,935	118.6%	55.2%	51.0%	25.0%
44	878,474	7.9%	7.9%	583,434	113.9%	50.8%	50.2%	25.0%
45	5,372,752	-0.3%	-0.3%	5,126,198	89.4%	51.5%	43.5%	25.0%
46	2,270,360	-11.2%	-11.2%	1,062,403	52.9%	52.9%	9.2%	9.2%
47	7,633,125	-5.1%	-5.1%	6,816,657	49.6%	49.6%	20.7%	20.7%
48	977,959	-15.1%	-15.1%	2,646,447	119.5%	39.8%	83.1%	25.0%
49	3,015,531	-12.3%	-12.3%	8,160,309	46.9%	38.8%	30.9%	25.0%
52	6,565,548	-8.5%	-8.5%	22,554,637	164.4%	34.8%	125.4%	25.0%
53	3,576,573	-11.7%	-11.7%	3,411,764	38.6%	38.6%	12.9%	12.9%
57	5,442,095	-3.8%	-3.8%	3,888,285	24.1%	24.1%	7.8%	7.8%
60	20,640,807	-8.7%	-8.7%	13,050,576	48.4%	48.4%	13.4%	13.4%
Statewide:	84,664,174	-6.6%	-6.6%	150,823,062	110.3%	36.3%	68.3%	20.9%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SECTION D - EXPLANATORY MATERIAL

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

This memorandum supplements the filing letter and supporting exhibits setting forth a revision of Dwelling Fire and Extended Coverage insurance rates in the State of North Carolina. It is the purpose of this memorandum to describe the source data used and to set forth in detail the insurance ratemaking procedures reflected in the filing. Certain pages in the filing and accompanying material contain a notation "all carriers" or other similar wording. This indicates that the data are combined ISO, ISS, AAIS, and NISS data. Data for certain companies are not included, as noted in Section E.

Premium and Loss Experience

This revision is based upon the combined premium and loss experience of all licensed companies writing Dwelling insurance in this State, except as noted in Section E. In order to have this experience available in all detail necessary for rate review and ratemaking in accordance with accepted standards, all such companies are required to file each year their total Dwelling insurance experience with the official statistical agents. Experience is recorded pursuant to the officially approved statistical plans and reported by the companies in accordance with instructions issued by the statistical agents under the Official Calls for Experience.

The Commissioner appointed the following statistical agents for the collection of Dwelling insurance experience in North Carolina: Insurance Services Office (ISO), Independent Statistical Service (ISS), American Association of Insurance Services (AAIS), and National Independent Statistical Service (NISS).

Experience utilized in the filing was collected under the Personal Lines Statistical Plan (Other Than Automobile), Personal Lines Statistical Agent Plan (Other Than Automobile) and the 2008 Official Statistical Programs of ISO, the Statistical Plan for Dwelling Fire and Extended Coverage Policies, Mobilehome Policies, and Dwelling Policies and the 2008 Statistical Programs of ISS, the Dwelling Statistical Plan developed by AAIS and the 2008 Statistical Programs of the AAIS, the Dwelling Statistical Plan developed by the NISS and the 2008 Statistical Programs of the NISS. In substance, the statistical plans of all statistical agents are similar in North Carolina, and provide for the recording and reporting of the experience in the detail required for ratemaking and in such form that the experience of all companies can be combined.

The licensing of an organization and its appointment as a statistical agent in the various states is predicated upon demonstration by the organization of its ability to perform this function. Moreover, the performance of the statistical agents is reviewed periodically through examination by personnel of state insurance departments under the convention examinations of the National Association of Insurance Commissioners. From time to time such organizations are called upon by Insurance Department examiners to verify, and do verify the data consolidated by them as statistical agents.

The insurance companies likewise are subject to a variety of checks and controls. Effective controls are maintained within the company over the activities of company employees connected with the company's statistics. Companies are required by statute to submit directly to the Insurance Department statistical and accounting information to be found in the Annual Statement and the Insurance Expense Exhibit. These documents are scrutinized by experienced Insurance Department personnel throughout the country. The insurance companies are also subject to examination by the Insurance Department, which examinations extend into the statistical records of the companies.

Tabulations of experience reported to the Independent Statistical Service, American Association of Insurance Services, and National Independent Statistical Service are provided to the Insurance Services Office. The Insurance Services Office combines the experience of all statistical agents and develops the analysis included in this filing. This work is performed at the direction of the North Carolina Rate Bureau.

Statewide Rate Level Exhibits

1. Experience

   Dwelling Fire and Extended Coverage insurance experience was compiled on a calendar accident year basis for the years ended December 31, 2007, 2006, 2005, 2004, and 2003. For any twelve-month period, the accident year experience brings together the losses resulting from accidents occurring during that period with the premiums and number of dwellings "earned" during the same period. Since this filing utilizes a computer model to measure losses attributable to hurricanes, actual hurricane losses have been removed from the ratemaking experience.

2. Average Rating Factors

   Earned premiums at present rates are used to determine average rating factors. The average rating factor is the ratio of the average rate (earned premium at manual level divided by corresponding house-years) and the average current manual base rate. The average rating factor is used to convert the pure-premiums incurred during the experience period to the base level.

   For data which was available in sufficient detail, the earned premiums at present manual rates for the Dwelling Fire and Extended Coverage insurance coverages are calculated by multiplying the number of insured dwellings earned during the experience period by the rates in effect at the time of review. For the ISO Stat Agent Plan and the AAIS data, the earned premium at present manual rates were calculated by applying on-level earned premium factors to reported earned premiums.

3. Losses

   Losses compiled for any accident year include paid losses as well as loss reserves. The amounts that will ultimately be required as payments of claims on open cases are carefully determined by the claim departments of the companies, and experience has shown that these determinations are highly accurate in the aggregate. Since, however, there are differences between the total incurred losses so determined and the amounts ultimately paid, the ratemaking procedure provides for a "development" of the incurred losses to a basis which, for all practical purposes, can be considered as the ultimate basis. This development is accomplished as follows:

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

Each year the experience is compiled for the latest five years, all valued as of three months after the close of the latest accident year period. Thus, the experience is reported for the latest year as of 15 months, the preceding year as of 27 months, the next preceding year as of 39 months, the third preceding year as of 51 months and the fourth preceding year as of 63 months all measured from the beginning of each accident year respectively.

From reports of prior years, similarly aged experience was obtained so that there are available 5 successive reports for the earliest year, 4 successive reports for the next earliest year, 3 successive reports for the middle year and 2 successive reports for the second most recent year.

Dwelling claims generally are settled at and are sufficiently matured as of 87 months, by which time nearly all incurred losses have been paid. From a comparison of the incurred losses for each year at successive valuation dates, it is determined what the rate of development has been in the past in order to calculate the development of less mature losses. This development is reflected in the incurred losses for the less mature years by the application of loss development factors. In this filing, loss development factors have been calculated based on the statewide experience of companies reporting to ISO, and are as follows:

	Factor to Develop to 87 Months	
Accident Year Ended	Fire	Extended Coverage
December 31, 2003	1.000	1.002
December 31, 2004	1.000	1.005
December 31, 2005	0.999	1.008
December 31, 2006	0.997	1.018
December 31, 2007	0.990	1.036

The derivation of the factors shown above is shown on pages D-12 and D-13. By applying these factors, the reported incurred losses have been adjusted to the amounts at which it is believed they will ultimately be settled.

In order to insure stability in rate levels while maintaining adequacy in the event of wide swings in hurricane and other losses, an excess procedure and a hurricane loss model have been utilized for Extended Coverage. Hence, extreme shifts in rate level (both upward and downward), which might result from reflecting large hurricane and other losses only in the year in which they occur will be avoided. The incurred non-modeled excess losses are those losses which result from unusually severe loss activity (other than hurricane). They are removed from the experience used in developing rates. In order to reflect the impact of excess losses (that are not related to hurricanes and not accounted for in the hurricane model) on a long-term basis, the non-modeled losses are multiplied by an excess factor of 1.034. The derivation of the excess factor is shown on Page D-30. The derivation of the excess non-modeled losses is shown on page D-31. The modeled losses used in this filing are based on analysis performed by AIR Worldwide on behalf of the North Carolina Rate Bureau. See page D-32 for details.

4. Loss Adjustment Expense

The Dwelling loss adjustment expenses, prior to trend considerations, are determined as an average percentage of the North Carolina incurred losses for calendar accident years 2003-2007 for Fire and Extended Coverage, based on a North Carolina expense call. The average is calculated using the five year period, removing the high and low values, and averaging the remaining three years. See pages D-26 and D-28.

5. Fixed Expense
The fixed expense (general expenses and other acquisition expenses) is determined as an average percentage of North Carolina earned premiums for calendar accident years 2005-2007, based on a North Carolina expense call. See pages D-25 and D-27. The development of fixed expense per policy is shown on page D-29.

6. Loss Trend

Loss Trend is based on two indices; the Boeckh Residential Index and the Modified Consumer Price Index. These indices are averaged (weighted 80% and 20%, respectively) and comprise the Current Cost Index.

The loss trending procedure is accomplished in two steps. In the first step Current Cost Factors are applied to each year's losses. The Current Cost Factors are derived from the external indices and, when applied to a given year's losses, translate these losses to a cost level which represents November 15, 2009. In order to trend losses from November 15, 2009 to one year beyond the assumed effective date of June 1, 2011, a Loss Projection Factor is applied. This projection factor is based on the annual change inherent in the latest twelve quarterly points of the Current Cost Index.

In reviewing the loss trends, the annual rates of change in Dwelling Fire and Extended Coverage pure-premium during the 2003-2007 experience period are higher than the observed annual changes in the external indices. Therefore, to project losses to a 2012 level, a 2% annual trend adjustment was selected for both Dwelling Fire and Extended Coverage by the Property Rating Subcommittee.

Since the external indices necessarily ignore the effect of policy deductibles, a First Dollar procedure to trend from the first dollar of loss is incorporated into the calculation of the Loss Projection Factor.

The procedures described above are displayed on pages D-14, D-15, D-16, D-16a, D-19 and D-22.

7. Expense Trend

The average annual change in expenses is based on the All Items Less Energy Consumer Price Index and the Compensation Cost Index. The expected average annual change in expenses has been selected to be 2.5% by the Property Rating Subcommittee based on analysis and review of these data, which are displayed on pages D-23 to D-24.

8. Premium Trend

The historical average relativities are used to calculate an average annual change. This change is not based on a consistent set of insureds, since some of the growth is due to the addition of new homes. For this reason, a selection of an annual growth rate of 3.0% for buildings was made by the Property Rating Subcommittee. This rate of change is used to estimate the average relativity at the point in time corresponding to the midpoint of the latest quarter of the Current Cost Index (November 15, 2009). The Current Amount Factor for a given year is calculated as the ratio of the November 15, 2009 average relativity and the given year's average relativity. In order to calculate the Premium Projection Factor, the adjusted annual rate of change is compounded over the time period between November 15, 2009 and December 1, 2011 (six months beyond the assumed effective date). The calculation is shown on pages D-17-18 and D-20-21.

9. Trend Period

The effective date assumed in this filing for trend purposes is June 1, 2011. Given this effective date, the trend periods for premiums, losses and expenses are as follows:

- premiums are trended from January 1 of the given year to December 1, 2011.
- losses are trended from July 1 of the given year to June 1, 2012.
- general expense and other acquisition expense percentages, since they are based on 2005-2007 data, are trended from July 1, 2006 to December 1, 2011.
- loss adjustment expense percentages, since they are based on 2003-2007 data, are trended from July 1, 2005 to June 1, 2012.

10. Expected Loss and Fixed Expense Ratio

These quantities represent the portion of the premium income available for losses, loss adjustment expenses, general expenses and other acquisition expenses. They are determined from special calls for North Carolina expense experience and reflect the 2005, 2006, and 2007 results as reported by all companies licensed in North Carolina during those years. The breakdown of the expected loss and fixed expense ratios is set forth on page D-25 for Fire and page D-27 for Extended Coverage.

11. Net Cost of Reinsurance per Policy

This quantity represents the expense and profit component of the reinsurance premium paid by the primary insurers. (See testimony of D. Appel.)

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

Class Rate Level Exhibits - Fire and Extended Coverage (pages C-5 and C-6)

1. Trended Adjusted Incurred Losses (column 1)

   Incurred losses for the latest five years, trended by year using Current Cost Factors and a Loss Projection Factor. For Extended Coverage, the excess loss procedure is incorporated into the incurred losses.

2. Trended Average Rating Factor (column 3)

   The Average Rating Factor trended by Current Amount Factors and a Premium Projection Factor.

3. Credibility (column 5)

   The five year loss cost by class is assigned a credibility value based on the number of house years underlying this loss cost. The standard for full credibility is 500,000 house years for Fire and 330,000 house years for Extended Coverage, with partial credibility equal to

   $$\sqrt{\text{five year house years / full credibility standard}}$$

   truncated to the nearest tenth. The complement of credibility is assigned to the statewide five year base loss cost adjusted by the ratio of the class' current base rate and the statewide average current base rate.

4. Modeled Base Loss Cost (column 7 - Extended Coverage)

   The modeled hurricane base-class loss cost is derived by dividing modeled class hurricane losses by the product of the average rating factor and house-years for the latest year, trended using Current Cost/Amount Factors and Composite Projection Factors by class.

5. Indicated Base Loss Cost (column 7 - Fire, column 9 - Extended Coverage)

   The indicated base loss cost by class is the statewide base loss cost (computed on the statewide indications pages) adjusted by the class relativity indicated by the credibility weighted loss cost (ratio of class to statewide of column 6 for Fire or column 8 for Extended Coverage).

6. Indicated Net Base Rate (column 10 - Fire, column 12 - Extended Coverage)

   The indicated net base rate is the sum of the loss cost and fixed expense divided by the expected loss and fixed expense ratio derived on page D-25. The fixed expense is calculated as the average current base rate multiplied by the fixed expense ratio developed on page D-29.

7. Compensation for Assessment Risk per Policy (column 11 - Fire, column 13 - Extended Coverage)

   The compensation for assessment risk is reflected as a percentage of the base rate by class and is loaded for the effects of taxes and commission. (See testimony of D. Appel.)

8. Net Cost of Reinsurance per Policy (column 14 - Extended Coverage)

   This quantity represents the expense and profit component of the reinsurance premium paid by the primary insurers. (See testimony of D. Appel.)

9. Indicated Base Rate Change (column 16 - Fire, column 19 - Extended Coverage)

   The indicated base rate level change is the ratio of required base rate and current base rate, minus 1.

10. Indicated Rate Change Balanced to Statewide (column 17 - Fire, column 20 - Extended Coverage)

    These are indicated base rate level changes adjusted to weigh down to the statewide indicated change.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

Territory Rate Level Exhibits - Fire (pages C-7-8)

1. Latest Year Earned Premium at Current Level (column 1)

   Earned premium for the latest year (2007), adjusted to the manual rate level currently in effect.

2. Five Year Experience Base Loss Cost (column 3)

   A five year experience base loss cost by territory is derived by dividing five year territory losses by the product of the five year average rating factor and five year house-years.

3. Credibility (column 5)

   The five year loss cost is assigned a credibility value based upon the number of house years underlying this loss cost. The standard for full credibility is 500,000 house years, with partial credibility equal to

   $$\sqrt{\text{five year house years / full credibility standard}}$$

   truncated to the nearest tenth. For territories 48 and 49, partial credibility was determined based on their combined number of house years. The complement of credibility is assigned to the statewide five year experience base loss cost adjusted by the ratio of the territory's current base rate and the statewide average current base rate.

4. Indicated Statewide Base Loss Cost (column 7)

   The statewide base loss cost derived on the statewide indications page.

5. Trended General and Other Acquisition Expenses (column 9)

   The trended general and other acquisition expense provision is the trended statewide provisions for these expenses multiplied by the ratio of statewide average rate to territory rate.

6. Compensation for Assessment Risk per Policy (column 13)

   The compensation for assessment risk is reflected as a percentage of the base rate by class and is loaded for the effects of taxes and commission. (See testimony of D. Appel.)

7. Indicated Rate Level Change (column 18)

   The indicated rate level change is the ratio of required base rate and current base rate, minus 1.

8. Indicated Rate Level Change Balanced to Statewide (column 19)

   These are indicated base rate level changes adjusted to weigh down to the statewide indicated change.

9. Indicated Buildings Rate Level Change (column 20)

   The indicated buildings rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated buildings base rate change balanced to statewide (column 17) on the class indications page.

10. Indicated Contents Rate Level Change (column 21)

    The indicated contents rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated contents base rate change balanced to statewide (column 17) on the class indications page.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

Territory Rate Level Exhibits - Extended Coverage (pages C-9-10)

1. Latest Year Earned Premium at Current Level (column 1)

   Earned premium for the latest year (2007), adjusted to the manual rate level currently in effect.

2. Five Year Non-Modeled Experience Base Loss Cost (column 3)

   A five year experience base loss cost by territory is derived by dividing five year territory losses by the product of the five year average rating factor and five year house-years. The territory losses exclude hurricane losses and include an excess loss provision.

3. Credibility (column 5)

   The five year loss cost is assigned a credibility value based upon the number of house years underlying this loss cost. The standard for full credibility is 330,000 house years, with partial credibility equal to

   $$\sqrt{\text{five year house years / full credibility standard}}$$

   truncated to the nearest tenth. For territories 48 and 49, partial credibility was determined based on their combined number of house years. The complement of credibility is assigned to the statewide five year non-modeled experience base loss cost.

4. Modeled Hurricane Base Loss Cost (column 7)

   The modeled hurricane base loss cost is derived by dividing modeled hurricane territory losses by the product of the average rating factor and house-years for the latest year.

5. Indicated Statewide Base Loss Cost (column 9)

   The statewide base loss cost derived on the statewide indications page.

6. Trended General and Other Acquisition Expenses (column 11)

   The trended general and other acquisition expenses are the trended statewide provisions for these expenses multiplied by the ratio of statewide average rate to territory average rate.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

7. Expected Loss and Fixed Expense Ratio (column 13)

   These quantities represent the portion of the premium income available for losses, loss adjustment expenses, general expenses and other acquisition expenses. The ratio varies by territory because the provision for profit varies by territory. (See testimony of D. Appel.)

8. Compensation for Assessment Risk per Policy (column 15)

   The compensation for assessment risk is reflected as a percentage of the base rate by class and is loaded for the effects of taxes and commission. (See testimony of D. Appel.)

9. Net Cost of Reinsurance per Policy (column 16)

   This quantity represents the expense and profit component of the reinsurance premium paid by the primary insurers. (See testimony of D. Appel.)

10. Indicated Rate Level Change (column 21)

    The indicated rate level change is the ratio of required base rate and current base rate, minus 1.

11. Indicated Rate Level Change Balanced to Statewide (column 22)

    These are indicated base rate level changes adjusted to weigh down to the statewide indicated change.

11. Indicated Buildings Rate Level Change (column 23)

    The indicated buildings rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated buildings base rate change balanced to statewide (column 20) on the class indications page.

12. Indicated Contents Rate Level Change (column 24)

    The indicated contents rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated contents base rate change balanced to statewide (column 20) on the class indications page.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXPLANATORY MEMORANDUM

Credibility Factor Determination

Credibility considerations enter into the Dwelling Fire and Extended Coverage ratemaking formulas.

The credibility procedure is based on the 'frequency with severity modification' model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house year standards. Partial credibility (Zp) is calculated as follows:

$Z_p = \sqrt{\text{five year house years / full credibility standard}}$ (truncated to the nearest tenth)

The full credibility standards are 500,000 house years for Fire and 330,000 house years for Extended Coverage.

On a statewide and class basis, both Fire and Extended Coverage are fully credible.

On a territory basis, partial credibility may be employed. In that case, the calculation of the rate level indication incorporates credibility as follows: credibility is applied to the five year (non-hurricane for Extended Coverage) territory loss costs and (1 - credibility) to the complement of credibility.

NORTH CAROLINA
DWELLING FIRE INSURANCE

LOSS DEVELOPMENT

Accident Year	North Carolina Incurred Losses as of 15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months
1996	7,915,525	7,958,045	8,022,075	7,993,599	7,977,188	7,977,188	7,976,224
1997	8,596,575	8,749,217	8,711,970	8,735,962	8,752,425	8,704,923	8,734,710
1998	9,399,620	9,351,527	9,366,171	9,381,661	9,381,654	9,381,654	9,381,654
1999	8,368,505	8,265,907	8,243,674	8,183,056	8,184,109	8,184,642	8,184,642
2000	11,425,476	11,491,408	11,497,403	11,497,707	11,495,781	11,495,781	11,495,781
2001	10,167,880	10,154,201	10,159,948	10,058,040	10,071,749	10,071,749	10,071,749
2002	10,651,631	10,731,097	10,565,068	10,644,644	10,612,092	10,611,632	
2003	10,788,240	10,693,973	10,644,116	10,647,475	10,647,684		
2004	8,975,157	8,593,054	8,571,955	8,554,047			
2005	10,847,063	10,607,270	10,595,112				
2006	9,017,091	8,817,456					
2007	9,527,968						

Accident Year	North Carolina Link Ratios 27:15	39:27	51:39	63:51	75:63	87:75
1996	1.005	1.008	0.996	0.998	1.000	1.000
1997	1.018	0.996	1.003	1.002	0.995	1.003
1998	0.995	1.002	1.002	1.000	1.000	1.000
1999	0.988	0.997	0.993	1.000	1.000	1.000
2000	1.006	1.001	1.000	1.000	1.000	1.000
2001	0.999	1.001	0.990	1.001	1.000	1.000
2002	1.007	0.985	1.008	0.997	1.000	
2003	0.991	0.995	1.000	1.000		
2004	0.957	0.998	0.998			
2005	0.978	0.999				
2006	0.978					

	27:15	39:27	51:39	63:51	75:63	87:75
Average	0.993	0.998	0.999	1.000	0.999	1.001
Selected Link Ratio	0.993	0.998	0.999	1.000	0.999	1.001

Selected Loss Development Factors

Fire	2003	2004	2005	2006	2007
	1.000	1.000	0.999	0.997	0.990

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

LOSS DEVELOPMENT

Accident Year	North Carolina Incurred Losses as of 15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months
1996	33,953,875	34,615,145	34,785,877	34,834,832	34,837,768	34,831,776	34,831,508
1997	3,913,693	3,964,677	3,993,156	3,993,198	4,022,307	4,023,207	4,023,169
1998	10,313,984	10,478,731	10,485,733	10,488,632	10,507,476	10,507,351	10,507,120
1999	13,199,571	13,299,412	13,335,417	13,420,781	13,420,731	13,419,831	13,419,581
2000	6,553,230	6,678,174	6,676,006	6,676,147	6,676,162	6,676,162	6,688,551
2001	4,111,834	4,200,311	4,262,237	4,320,345	4,322,195	4,322,195	4,322,195
2002	6,499,426	6,647,489	6,991,344	7,039,794	7,166,143	7,241,522	
2003	11,861,158	12,086,898	12,185,055	12,157,288	12,157,288		
2004	6,099,216	6,187,996	6,191,949	6,203,034			
2005	4,786,510	4,808,438	4,840,996				
2006	5,230,156	5,427,978					
2007	5,404,621						

Accident Year	North Carolina Link Ratios 27:15	39:27	51:39	63:51	75:63	87:75
1996	1.019	1.005	1.001	1.000	1.000	1.000
1997	1.013	1.007	1.000	1.007	1.000	1.000
1998	1.016	1.001	1.000	1.002	1.000	1.000
1999	1.008	1.003	1.006	1.000	1.000	1.000
2000	1.019	1.000	1.000	1.000	1.000	1.002
2001	1.022	1.015	1.014	1.000	1.000	1.000
2002	1.023	1.052	1.007	1.018	1.011	
2003	1.019	1.008	0.998	1.000		
2004	1.015	1.001	1.002			
2005	1.005	1.007				
2006	1.038					

	27:15	39:27	51:39	63:51	75:63	87:75
Average	1.018	1.010	1.003	1.003	1.002	1.000
Selected Link Ratio	1.018	1.010	1.003	1.003	1.002	1.000

EC	Selected Loss Development Factors 2003	2004	2005	2006	2007
	1.002	1.005	1.008	1.018	1.036

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

DEVELOPMENT OF CURRENT COST FACTORS (CCF) AND LOSS PROJECTION FACTOR

QUARTER ENDING DECEMBER 31, 2009

PART A: ESTABLISHMENT OF MONTHLY CURRENT COST INDEX (CCI) WITH:
20% WEIGHT TO MODIFIED COMSUMER PRICE INDEX (MCPI)
80% WEIGHT TO BOECKH RESIDENTIAL INDEX (BRI) FOR N.C. #
(MCPI BASE: 1967 = 100 BRI BASE: 1967 = 100)

MO	BRI	MCPI	CCI	QCCI	BRI	MCPI	CCI	QCCI	BRI	MCPI	CCI	QCCI
		2007				2008				2009		
1	888.5	187.9	748.4		903.1	183.6	759.2		946.0	179.5	792.7	
2	890.3	189.5	750.1		901.7	184.1	758.2		933.7	181.4	783.2	
3	891.5	190.5	751.3	749.9	902.0	185.1	758.6	758.7	934.7	182.9	784.3	786.7
4	889.3	190.0	749.4		904.8	184.9	760.8		927.9	183.5	779.0	
5	887.5	189.2	747.8		901.6	183.9	758.1		927.3	183.1	778.5	
6	887.6	187.3	747.5	748.2	900.6	182.1	756.9	758.6	928.6	181.5	779.2	778.9
		2007				2008				2009		
7	890.2	185.1	749.2		908.7	181.2	763.2		920.1	179.6	772.0	
8	898.4	184.6	755.6		916.0	181.5	769.1		918.1	178.4	770.2	
9	899.3	185.8	756.6	753.8	916.0	183.3	769.5	767.3	918.6	180.0	770.9	771.0
10	905.1	186.6	761.4		928.5	183.7	779.5		907.6	179.8	762.0	
11	907.2	186.1	763.0		939.6	182.6	788.2		924.3	178.1	775.1	
12	905.7	184.3	761.4	761.9	940.2	180.2	788.2	785.3	926.2	176.5	776.3	771.1

PART B: USE OF AVERAGE ANNUAL CCI TO CALCULATE CURRENT COST FACTORS (CCF)

CALENDAR YEAR AVERAGE CCI				CURRENT COST FACTORS BASED ON AVERAGE CCI VALUE FOR
YEAR	BRI	MCPI	CCI	QUARTER ENDING 12/31/2009 = 771.1
2003	704.5	204.8	604.6	1.275
2004	762.8	200.8	650.4	1.186
2005	812.8	196.9	689.6	1.118
2006	866.5	192.7	731.7	1.054
2007	895.1	187.2	753.5	1.023

THE FIGURES SHOWN WERE CALCULATED USING THE BOECKH RESIDENTIAL REPORT, MODIFIED BY APPLICATION OF CERTAIN ACTUARIAL FORMULAS, AND COMBINED WITH DATA AVAILABLE THROUGH VARIOUS GOVERNMENTAL SOURCES. FURTHER USE OF THE FIGURES DERIVED FROM THE BOECKH INDEX REQUIRES WRITTEN CONSENT FROM NCRB.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
DEVELOPMENT OF CURRENT COST FACTORS (CCF) AND LOSS PROJECTION FACTOR
QUARTER ENDING DECEMBER 31, 2009

PART C: COMPUTATION OF LOSS PROJECTION FACTOR

CAL. YEAR	QUARTER ENDING	TIME (2X)	$4X^2$	AVG. CCI (Y)	Z=LN(Y)	2XZ	FITTED CCI
2007	MAR. 31	-11	121	749.9	6.620	-72.820	750.0
2007	JUN. 30	-9	81	748.2	6.618	-59.562	752.9
2007	SEP. 30	-7	49	753.8	6.625	-46.375	755.7
2007	DEC. 31	-5	25	761.9	6.636	-33.180	758.6
2008	MAR. 31	-3	9	758.7	6.632	-19.896	761.5
2008	JUN. 30	-1	1	758.6	6.631	-6.6310	764.4
2008	SEP. 30	1	1	767.3	6.643	6.6430	767.3
2008	DEC. 31	3	9	785.3	6.666	19.998	770.2
2009	MAR. 31	5	25	786.7	6.668	33.340	773.2
2009	JUN. 30	7	49	778.9	6.658	46.606	776.1
2009	SEP. 30	9	81	771.0	6.648	59.832	779.1
2009	DEC. 31	11	121	771.1	6.648	73.128	782.0
			572		79.693	1.083	

EQUATIONS:
$Y = E^{A + BX}$
$Z = A + BX$
$SZ = NA + BSX$
$SXZ = ASX + BSX^2$

WHERE
A = MEAN OF FITTED LINE
B = AVERAGE QUARTERLY INCREMENT
S = SUMMATION
N = NUMBER OF OBSERVATIONS

2SXZ = 1.083 OR SXZ = 0.541 $4SX^2$ = 572 OR SX^2 = 143

A (MEAN OF FITTED LINE) = 79.693 / 12 = 6.641
B (AVG. QUARTERLY INCREMENT) = 0.541 / 143 = 0.0038

QUARTERLY RATE OF CHANGE = $E^{0.0038} - 1$ = 0.0038

ANNUAL RATE OF CHANGE = $(E^{0.0038})^4$ = 1.015 OR 1.5%

LOSS TREND ADJUSTMENT FACTOR = 1.020

ADJUSTED ANNUAL RATE OF CHANGE = 1.015 * 1.02 = 1.035

LOSS PROJECTION FACTOR* = $1.035^{30.5 / 12}$ = 1.091

* TO PROJECT LOSSES FROM 11/15/2009 TO 6/1/2012.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

FOOTNOTES TO DETERMINATION OF TREND

Modified Consumer Price Index - source: Bureau of Labor Statistics. Weights are applied to individual Consumer Price Index components as follows:

70 % House Furnishings
20% Apparel Commodities
10% Entertainment Commodities

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
PURE PREMIUM TREND

FIRE

Year	Exposures	Losses	Pure Premium
2003	542,271	33,080,282	61.00
2004	539,022	31,606,410	58.64
2005	554,597	35,338,295	63.72
2006	565,036	34,060,569	60.28
2007	570,959	39,662,750	69.47

Annual Rate of Change (4 pt)	4.63%
Annual Rate of Change (5 pt)	2.92%
Selected Prospective Annual Rate of Change	3.50%

EXTENDED COVERAGE
(Excluding Hurricane Losses)

	Exposures	Losses	Pure Premium
2003	549,223	21,064,594	38.35
2004	546,462	16,296,123	29.82
2005	554,068	16,864,044	30.44
2006	562,984	18,555,078	32.96
2007	568,016	21,133,592	37.21

Annual Rate of Change (4 pt)	7.72%
Annual Rate of Change (5 pt)	0.40%
Selected Prospective Annual Rate of Change	3.50%

NORTH CAROLINA
DWELLING FIRE INSURANCE
CALCULATION OF PREMIUM PROJECTION FACTORS

YEAR	(1) X	(2) Average Policy Size Relativity	(3) Log of Average Policy Size Relativity	(4) X * Log of Average Policy Size Relativity	(5) X * X
Buildings					
2003	-2	3.215	1.168	-2.336	4
2004	-1	3.379	1.218	-1.218	1
2005	0	3.576	1.274	0.000	0
2006	1	3.806	1.337	1.337	1
2007	2	4.027	1.393	2.786	4
Sum			6.390	0.569	10
Contents					
2003	-2	1.728	0.547	-1.094	4
2004	-1	1.747	0.558	-0.558	1
2005	0	1.750	0.560	0.000	0
2006	1	1.803	0.589	0.589	1
2007	2	1.824	0.601	1.202	4
Sum			2.855	0.139	10

	Buildings	Contents
(6) Sum of Column (3) / 5 = A	1.278	0.571
(7) Sum of Column (4) / Sum of Column (5) = B	0.057	0.014
(8) Average Annual Rate of Change = (e ^ B) -1	0.059	0.014
(9) Selected Annual Rate of Change	0.030	0.014
(10) Premium Projection Factor to trend from 11/15/2009 to 12/1/2011 (24.5 months)	1.062	1.029

NORTH CAROLINA
DWELLING FIRE INSURANCE
CALCULATION OF CURRENT COST/AMOUNT FACTORS

YEAR	Average Policy Size Relativity	Current Amount Factor (b)	Latest Year Premium Distribution
Buildings			
2003	3.215	1.364	0.9293
2004	3.379	1.297	0.9293
2005	3.576	1.226	0.9293
2006	3.806	1.152	0.9293
2007	4.027	1.089	0.9293
11/15/2009 (a)	4.384		
Contents			
2003	1.728	1.098	0.0707
2004	1.747	1.086	0.0707
2005	1.750	1.085	0.0707
2006	1.803	1.053	0.0707
2007	1.824	1.041	0.0707
11/15/2009 (a)	1.898		

Buildings & Contents	Current Amount Factor (c)	Current Cost Factor	Current Cost/Amount Factor
2003	1.345	1.275	0.948
2004	1.282	1.186	0.925
2005	1.216	1.118	0.919
2006	1.145	1.054	0.921
2007	1.086	1.023	0.942

(a) A * [(1+C)^(34.5/12)], where C is the average annual rate of change (e^B - 1), 34.5 is the number of months between 1/1/2007 and 11/15/2009, and A is the average relativity at 1/1/2007.

(b) The Current Amount Factor equals the average relativity at 11/15/2009 divided by the yearly relativity.

(c) Weighted average of buildings and contents factors based on the latest year (2007) premium distribution.

NORTH CAROLINA
DWELLING FIRE INSURANCE
CALCULATION OF COMPOSITE PROJECTION FACTORS

(1)	Buildings Premium Projection Factor	1.062
(2)	2007 Buildings Premium Distribution	0.9293
(3)	Contents Premium Projection Factor	1.029
(4)	2007 Contents Premium Distribution	0.0707
(5)	Total Premium Projection Factor [(1) x (2)] + [(3) x (4)]	1.060
(6)	Loss Projection Factor	1.091
(7)	Trend From First Dollar (a)	1.003
(8)	Composite Projection Factor [(6) x (7)] / (5)	1.032

(a) First dollar factor calculated as [A * (B + C) - B] / (A * C)
where A = average yearly loss trend factor
B = loss eliminated by deductible
C = five year losses after application of deductible

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE
CALCULATION OF PREMIUM PROJECTION FACTORS

YEAR	(1) X	(2) Average Policy Size Relativity	(3) Log of Average Policy Size Relativity	(4) X * Log of Average Policy Size Relativity	(5) X * X
Buildings					
2003	-2	4.255	1.448	-2.896	4
2004	-1	4.401	1.482	-1.482	1
2005	0	4.594	1.525	0.000	0
2006	1	4.901	1.589	1.589	1
2007	2	5.161	1.641	3.282	4
Sum			7.685	0.493	10
Contents					
2003	-2	2.910	1.068	-2.136	4
2004	-1	2.667	0.981	-0.981	1
2005	0	2.423	0.885	0.000	0
2006	1	2.491	0.913	0.913	1
2007	2	2.524	0.926	1.852	4
Sum			4.773	-0.352	10

	Buildings	Contents
(6) Sum of Column (3) / 5 = A	1.537	0.955
(7) Sum of Column (4) / Sum of Column (5) = B	0.049	-0.035
(8) Average Annual Rate of Change = (e ^ B) -1	0.050	-0.034
(9) Selected Annual Rate of Change	0.030	-0.034
(10) Premium Projection Factor to trend from 11/15/2009 to 12/1/2011 (24.5 months)	1.062	0.932

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE
CALCULATION OF CURRENT COST/AMOUNT FACTORS

YEAR	Average Policy Size Relativity	Current Amount Factor (b)	Latest Year Premium Distribution
Buildings			
2003	4.255	1.321	0.9653
2004	4.401	1.277	0.9653
2005	4.594	1.223	0.9653
2006	4.901	1.147	0.9653
2007	5.161	1.089	0.9653
11/15/2009 (a)	5.619		
Contents			
2003	2.910	0.785	0.0347
2004	2.667	0.857	0.0347
2005	2.423	0.943	0.0347
2006	2.491	0.917	0.0347
2007	2.524	0.905	0.0347
11/15/2009 (a)	2.285		

Buildings & Contents	Current Amount Factor (c)	Current Cost Factor	Current Cost/Amount Factor
2003	1.302	1.275	0.979
2004	1.262	1.186	0.940
2005	1.213	1.118	0.922
2006	1.139	1.054	0.925
2007	1.083	1.023	0.945

(a) A * [(1+C)^(34.5/12)], where C is the average annual rate of change (e^B - 1), 34.5 is the number of months between 1/1/2007 and 11/15/2009, and A is the average relativity at 1/1/2007.

(b) The Current Amount Factor equals the average relativity at 11/15/2009 divided by the yearly relativity.

(c) Weighted average of buildings and contents factors based on the latest year (2007) premium distribution.

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE
CALCULATION OF COMPOSITE PROJECTION FACTORS

(1)	Buildings Premium Projection Factor	1.062
(2)	2007 Buildings Premium Distribution	0.9653
(3)	Contents Premium Projection Factor	0.932
(4)	2007 Contents Premium Distribution	0.0347
(5)	Total Premium Projection Factor [(1) x (2)] + [(3) x (4)]	1.057
(6)	Loss Projection Factor	1.091
(7)	Trend From First Dollar (a)	1.014
(8)	Composite Projection Factor [(6) x (7)] / (5)	1.047

(a) First dollar factor calculated as [A * (B + C) - B] / (A * C)
where A = average yearly loss trend factor
B = loss eliminated by deductible
C = five year losses after application of deductible

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
DETERMINATION OF TREND FOR EXPENSES

	ALL ITEMS LESS ENERGY CPI INDEX	COMPENSATION COST INDEX
Apr-06	203.0	
May-06	203.3	193.0
Jun-06	203.6	
Jul-06	203.9	
Aug-06	204.4	193.8
Sep-06	204.9	
Oct-06	205.6	
Nov-06	205.3	194.9
Dec-06	205.1	
Jan-07	206.0	
Feb-07	207.1	196.7
Mar-07	207.9	
Apr-07	208.2	
May-07	208.4	199.5
Jun-07	208.6	
Jul-07	209.0	
Aug-07	209.4	201.4
Sep-07	210.0	
Oct-07	210.7	
Nov-07	210.9	200.8
Dec-07	210.9	
Jan-08	211.8	
Feb-08	212.5	204.1
Mar-08	213.4	
Apr-08	213.9	
May-08	214.1	205.0
Jun-08	214.6	
Jul-08	215.3	
Aug-08	215.9	205.8
Sep-08	216.4	
Oct-08	216.7	
Nov-08	216.4	205.6
Dec-08	215.9	
Jan-09	216.6	
Feb-09	217.3	207.3
Mar-09	218.0	
Apr-09	218.4	
May-09	218.3	208.4
Jun-09	218.4	
Jul-09	218.4	
Aug-09	218.6	209.4
Sep-09	219.1	
Oct-09	219.6	
Nov-09	219.3	209.0
Dec-09	219.0	
Jan-10	219.3	
Feb-10	219.7	211.5
Mar-10	220.1	

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
DETERMINATION OF TREND FOR EXPENSES

	All Items Less Energy (A)	CCI (B)	Combined (C)
(1) Annual Change in indices based on exponential curve of best fit for the latest 48 points (or 16 quarters)	2.25%	2.45%	2.35%
(2) Annual Change in indices based on exponential curve of best fit for the latest 36 points (or 12 quarters)	2.02%	1.99%	2.00%
(3) Annual Change in indices based on exponential curve of best fit for the latest 24 points (or 8 quarters)	1.41%	1.71%	1.56%
(4) Annual Change in indices based on exponential curve of best fit for the latest 12 points (or 4 quarters)	0.84%	1.71%	1.27%

(5) Selected Annual Change: 2.5%.

Notes: (A) All items less energy CPI index (urban). Source: Bureau of Labor Statistics.

(B) Total Compensation Cost Index - Insurance Carriers, Agent Brokers, and Service. Source: Bureau of Labor Statistics.

(C) Weighted Average determined as .50 (All items) + .50 (CCI).

NORTH CAROLINA
DWELLING FIRE INSURANCE
EXPENSE EXHIBIT

	2005	2006	2007	Average
Comissions and Brokerage	12,675,241	13,274,396	14,874,846	
Written Premium	87,822,962	89,750,996	93,714,308	
Ratio	0.144	0.148	0.159	0.150
Other Acquisition	5,655,731	5,307,663	6,213,213	
Earned Premium	87,614,069	86,466,555	91,296,213	
Ratio	0.065	0.061	0.068	0.065
General Expense	6,273,325	5,308,110	7,073,603	
Earned Premium	87,614,069	86,466,555	91,296,213	
Ratio	0.072	0.061	0.077	0.070
Taxes, Licenses and Fees	2,173,733	2,831,223	2,894,019	
Written Premium	87,822,962	89,750,996	93,714,308	
Ratio	0.025	0.032	0.031	0.029

Expected Loss and Fixed Expense Ratio

Commission and Brokerage	15.0%
Taxes, Licenses and Fees	2.9%
Dividends	0.0%
Contingencies	1.0%
Profit	9.5%
Total	28.4%
Expected Loss and Fixed Expense Ratio (1 - variable expense)	71.6%

NORTH CAROLINA
DWELLING FIRE INSURANCE
EXPENSE EXHIBIT

	2003	2004	2005	2006	2007	Average*
Allocated LAE	246,224	817,677	228,982	491,568	528,651	
Unallocated LAE	2,718,606	3,106,391	2,423,509	2,485,969	2,198,562	
Total LAE	2,964,830	3,924,068	2,652,491	2,977,537	2,727,213	
Incurred Losses	35,796,749	31,949,266	33,544,895	35,271,029	35,787,992	
Ratio	0.083	0.123	0.079	0.084	0.076	0.082

* Average excludes high and low values.

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE
EXPENSE EXHIBIT

	2005	2006	2007	Average
Comissions and Brokerage	8,777,625	7,852,068	8,059,111	
Written Premium	62,258,013	67,021,540	74,019,057	
Ratio	0.141	0.117	0.109	0.122
Other Acquisition	3,357,642	3,571,412	4,167,824	
Earned Premium	61,782,167	63,574,880	70,756,338	
Ratio	0.054	0.056	0.059	0.056
General Expense	3,634,785	3,627,450	4,240,035	
Earned Premium	61,782,167	63,574,880	70,756,338	
Ratio	0.059	0.057	0.060	0.059
Taxes, Licenses and Fees	1,223,261	1,081,444	1,543,903	
Written Premium	62,258,013	67,021,540	74,019,057	
Ratio	0.020	0.016	0.021	0.019

Expected Loss and Fixed Expense Ratio

Commission and Brokerage	12.2%
Taxes, Licenses and Fees	1.9%
Dividends	0.0%
Contingencies	1.0%
Profit	9.5%
Total	24.6%
Expected Loss and Fixed Expense Ratio (1 - variable expense)	75.4%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE
EXPENSE EXHIBIT

	2003	2004	2005	2006	2007	Average*
Allocated LAE	632,579	313,460	365,683	365,244	290,875	
Unallocated LAE	2,729,955	2,278,229	1,803,841	1,677,489	1,707,267	
Total LAE	3,362,534	2,591,689	2,169,524	2,042,733	1,998,142	
Incurred Losses	34,689,929	21,213,055	18,257,794	15,498,068	14,699,649	
Ratio	0.097	0.122	0.119	0.132	0.136	0.124

* Average excludes high and low values.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

CALCULATION OF TRENDED EXPENSE PROVISIONS

(1) Factor to trend losses based on annual rate of change:

Fire: $e^{(0.0038\,(30.5\,/\,3))} * 1.020^{(30.5\,/\,12)} * 1.118 = 1.222$

EC: $e^{(0.0038\,(30.5\,/\,3))} * 1.020^{(30.5\,/\,12)} * 1.118 = 1.222$

(2) Factor to trend LAE based on Current Expense Index:

Fire: $1.025^{(83\,/\,12)} = 1.186$

EC: $1.025^{(83\,/\,12)} = 1.186$

(3) Factor to trend premium based on growth in premium revenue:

Fire: $1.029^{(24.5\,/\,12)} * 1.145 = 1.214$

EC: $1.028^{(24.5\,/\,12)} * 1.139 = 1.205$

(4) Factor to trend expense based on Current Expense Index:

Fire: $1.025^{(65\,/\,12)} = 1.143$

EC: $1.025^{(65\,/\,12)} = 1.143$

(5) Trended Expenses

Fire:

Trended LAE Factor:	1 + (0.082 * 1.186 / 1.222)	=	1.080
Trended GE Ratio:	0.07 * 1.143 / 1.214	=	0.066
Trended OA Ratio:	0.065 * 1.143 / 1.214	=	0.061
Trended Fixed Expense Ratio	0.066 + 0.061	=	0.127
Statewide Average Current Base Rate		=	35.66
Fixed Expense Per Policy		=	4.53

EC:

Trended LAE Factor:	1 + (0.124 * 1.186 / 1.222)	=	1.121
Trended GE Ratio:	0.059 * 1.143 / 1.205	=	0.056
Trended OA Ratio:	0.056 * 1.143 / 1.205	=	0.053
Trended Fixed Expense Ratio	0.056 + 0.053	=	0.109
Statewide Average Current Base Rate		=	35.87
Fixed Expense Per Policy		=	3.91

NORTH CAROLINA DWELLING EXTENDED COVERAGE
DERIVATION OF EXCESS LOSS FACTOR

Year	(1) REP	(2) DIL	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) (6)/(2)
1950	1,388,467	312,200	0.225	0.225	0.000	0	0.000
1951	1,422,207	290,780	0.204	0.204	0.000	0	0.000
1952	1,440,159	792,365	0.550	0.500	0.050	72,008	0.091
1956	2,297,877	1,928,925	0.839	0.500	0.339	778,980	0.404
1957	2,117,102	839,255	0.396	0.396	0.000	0	0.000
1961	2,448,500	779,573	0.318	0.318	0.000	0	0.000
1962	2,342,116	672,396	0.287	0.287	0.000	0	0.000
1963	2,304,330	1,094,763	0.475	0.475	0.000	0	0.000
1964	2,333,802	713,168	0.306	0.306	0.000	0	0.000
1965	2,461,063	671,381	0.273	0.273	0.000	0	0.000
1966	2,592,580	646,405	0.249	0.249	0.000	0	0.000
1967	2,765,447	624,920	0.226	0.226	0.000	0	0.000
1968	3,684,951	571,095	0.155	0.155	0.000	0	0.000
1969	3,727,782	595,281	0.160	0.160	0.000	0	0.000
1970	3,809,666	755,021	0.198	0.198	0.000	0	0.000
1971	4,500,088	1,314,056	0.292	0.292	0.000	0	0.000
1972	6,175,223	848,369	0.137	0.137	0.000	0	0.000
1973	6,830,111	1,179,331	0.173	0.173	0.000	0	0.000
1974	5,341,091	2,504,466	0.469	0.469	0.000	0	0.000
1975	5,781,924	1,495,851	0.259	0.259	0.000	0	0.000
1976	6,310,907	1,045,882	0.166	0.166	0.000	0	0.000
1977	6,923,905	1,128,249	0.163	0.163	0.000	0	0.000
1978	7,371,068	2,656,163	0.360	0.360	0.000	0	0.000
1979	8,204,305	1,935,938	0.236	0.236	0.000	0	0.000
1980	9,409,413	1,851,000	0.197	0.197	0.000	0	0.000
1981	11,618,787	2,025,113	0.174	0.174	0.000	0	0.000
1982	12,703,938	2,672,646	0.210	0.210	0.000	0	0.000
1983	12,782,050	2,811,342	0.220	0.220	0.000	0	0.000
1984	13,378,072	5,069,761	0.379	0.379	0.000	0	0.000
1985	15,586,661	5,416,799	0.348	0.348	0.000	0	0.000
1986	18,573,125	3,624,751	0.195	0.195	0.000	0	0.000
1987	20,970,707	3,207,305	0.153	0.153	0.000	0	0.000
1988	22,803,120	6,816,348	0.299	0.299	0.000	0	0.000
1989	24,622,966	13,459,214	0.547	0.500	0.047	1,157,279	0.086
1990	25,923,637	5,278,639	0.204	0.204	0.000	0	0.000
1991	28,100,632	4,332,959	0.154	0.154	0.000	0	0.000
1992	29,900,438	4,742,564	0.159	0.159	0.000	0	0.000
1993	31,889,553	16,886,073	0.530	0.500	0.030	956,687	0.057
1994	34,062,149	8,139,204	0.239	0.239	0.000	0	0.000
1995	36,469,795	7,946,434	0.218	0.218	0.000	0	0.000
1996	40,105,731	10,177,932	0.254	0.254	0.000	0	0.000
1997	45,956,155	8,042,733	0.175	0.175	0.000	0	0.000
1998	50,483,351	19,677,761	0.390	0.390	0.000	0	0.000
1999	57,917,971	26,401,571	0.456	0.456	0.000	0	0.000
2000	64,276,450	14,556,461	0.226	0.226	0.000	0	0.000
2001	58,472,402	9,227,560	0.158	0.158	0.000	0	0.000
2002	62,801,958	15,725,972	0.250	0.250	0.000	0	0.000
2003	70,166,881	19,351,691	0.276	0.276	0.000	0	0.000
2004	77,384,514	15,018,657	0.194	0.194	0.000	0	0.000
2005	86,660,735	15,298,940	0.177	0.177	0.000	0	0.000
2006	93,459,391	16,657,822	0.178	0.178	0.000	0	0.000
2007	107,421,691	18,390,566	0.171	0.171	0.000	0	0.000
Total	1,258,476,942	308,203,651	14.247	13.781	0.466	2,964,954	
Average			0.274	0.265	0.009		

Average Excess Loss Ratio = Avg of column (5)	0.009
Average Normal Loss Ratio = Avg of column (4)	0.265
Excess Factor = 1.0 + (avg (5)/avg (4)) =	
= 1.0 + (0.009 / 0.265) =	1.034

North Carolina Dwelling Extended Coverage
Derivation of Excess Loss Factor
Development of Excess Losses on a $250 Deductible Level

Accident Year	Non Modelled Adjusted Inc. Losses	Excess Loss Ratio	Adjusted Excess Losses
2003	21,064,594	0.000	0
2004	16,296,123	0.000	0
2005	16,864,044	0.000	0
2006	18,555,078	0.000	0
2007	21,133,592	0.000	0

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

MODELED HURRICANE LOSSES

Terr	Buildings Loss Cost(a)	Contents Loss Cost(a)	2007 Modeled Losses (b)
7	5.136	1.596	21,895,847
8	6.548	2.464	24,532,323
32	0.301	0.052	535,450
34	0.519	0.098	932,950
36	0.161	0.027	243,966
38	0.158	0.026	322,366
39	0.170	0.035	360,306
41	1.326	0.255	1,491,585
44	0.357	0.070	138,950
45	0.982	0.192	2,060,566
46	0.293	0.062	183,275
47	0.529	0.103	1,648,014
48	3.032	0.817	1,426,400
49	1.644	0.425	2,398,603
52	3.909	1.425	15,969,222
53	0.320	0.064	657,696
57	0.190	0.042	531,553
60	0.112	0.023	1,075,441
Total			76,404,513

(a) Loss cost per $1,000 of total insured value.
(b) A factor of 1.000177 has been applied to the modeled losses produced by the AIR model to take into account the small amount of AAIS and ISO Stat Agent data not included in the exposure data provided to AIR.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
DEVIATIONS EXHIBIT

FIRE

Year	Written Premium Adjusted to Manual	Direct Written Premium	Average Deviation
2002	84,624,211	80,385,899	5.01%
2003	98,123,408	94,990,585	3.19%
2004	98,782,856	95,320,411	3.51%
2005	105,892,000	100,168,067	5.41%
2006	107,812,534	104,721,385	2.87%
2007	111,630,981	108,466,343	2.83%
Average			3.80%

EXTENDED COVERAGE

Year	Written Premium Adjusted to Manual	Direct Written Premium	Average Deviation
2002	73,672,319	71,518,165	2.92%
2003	87,406,361	85,404,593	2.29%
2004	99,836,209	97,943,061	1.90%
2005	110,505,128	109,819,429	0.62%
2006	121,270,197	116,962,879	3.55%
2007	139,269,462	135,070,237	3.02%
Average			2.38%

SECTION E
SUPPLEMENTAL MATERIAL

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SUPPLEMENTAL MATERIAL

North Carolina G.S. 58-36-15(h) specifies that the following information must be included in all policy form, rule and rate filings filed under Article 12B. 11 NCAC 10.1105 specifies that additional detail be provided under each of these items. These materials are contained on the pages indicated.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
AS PER 11 NCAC 10.1105

1. NORTH CAROLINA EARNED PREMIUMS AT THE ACTUAL AND CURRENT RATE LEVEL, LOSSES AND LOSS ADJUSTMENT EXPENSES, EACH ON PAID AND INCURRED BASES WITHOUT TRENDING OR OTHER MODIFICATION FOR THE EXPERIENCE PERIOD, INCLUDING THE LOSS RATIO ANTICIPATED AT THE TIME THE RATES WERE PROMULGATED FOR THE EXPERIENCE PERIOD

Exhibit (1)

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EARNED PREMIUMS AT ACTUAL AND CURRENT RATE LEVEL

I. EARNED PREMIUM AT COLLECTED LEVEL

Year	Fire	Extended Coverage
2003	$ 55,292,021	$ 70,166,881
2004	59,425,040	77,384,514
2005	65,746,111	86,660,735
2006	68,940,277	93,459,391
2007	72,689,311	107,421,691

II. EARNED PREMIUM AT CURRENT LEVEL

Year	Fire	Extended Coverage
2003	$ 68,712,070	$ 117,832,851
2004	70,342,210	119,932,667
2005	76,326,904	128,923,357
2006	81,161,298	142,171,971
2007	84,664,174	150,823,062

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

PAID/INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSE

I. PAID LOSSES

The Rate Bureau is advised by ISO that paid loss and loss adjustment expenses are not available for the experience period of this filing.

II. INCURRED LOSSES (a)

Year	Fire	Extended Coverage
2003	$ 33,080,282	$ 69,467,946
2004	31,606,410	28,337,984
2005	35,338,295	28,752,016
2006	34,060,569	20,595,873
2007	39,662,750	21,133,592

(a) Incurred losses are developed, adjusted to a common deductible of $250, include actual hurricane losses and do not include loss adjustment expense. These expenses are reflected via a factor. For Fire this factor is 8.0%. For Extended Coverage this factor is 12.1%.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ANTICIPATED LOSS AND LOSS ADJUSTMENT EXPENSE RATIOS

The anticipated loss and LAE ratios included in the 2006 filing (for rates implemented in 2006) were 0.720 for Fire, and 0.544 for Extended Coverage.

Exhibit (1)(a)

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EXCLUDED COMPANIES

(The market shares shown are based on 2007 Dwelling Fire and Extended Coverage written premium.)

The experience used to calculate rate level changes excludes experience reported by four companies (0.6% of the market).

The average policy amount relativities used in the premium trend procedure are based on the experience of companies reporting to the Insurance Services Office (full statistical plan only), the Independent Statistical Service, the National Insurance Statistical Service, and the North Carolina FAIR and Beach Plan. The experience reported to the American Association of Insurance Services and the experience reported under the ISO Stat Agent level data is excluded because it is not available in sufficient detail. In addition to the four companies excluded from the review, experience reported by two other companies was excluded from premium trend analyses because a large change in amount of insurance in a single year caused distortions in trend. The non-excluded ISO, ISS, NISS, and the FAIR and Beach Plan experience represents 89.9% of the market.

The loss development factors used in the calculation of the statewide rate level indications are based on ISO North Carolina experience. This experience represents 24.6% of the market.

See also the prefiled testimony of R. Curry and S. Thomas.

Not applicable to Dwelling Fire and Extended Coverage insurance.

Exhibit (1)(c)

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ADJUSTMENTS TO PREMIUMS, LOSSES, LOSS ADJUSTMENT EXPENSES, EXPENSES AND EXPOSURES

Adjustments made to premiums, losses, loss adjustment expenses, and expenses are set forth below and in the prefiled testimony of R. Curry, S. Thomas and D. LaLonde.

For ISO (excluding Stat Agent level data), ISS and NISS, losses are adjusted to the $250 base deductible level by application of loss elimination ratios. These factors are applied on a record-by-record basis and vary by cause of loss.

Losses were developed to an ultimate basis through the application of loss development factors. The derivation and application of loss development factors is described in the response to 11 NCAC 10.1105(3).

Additionally, due to the volatile nature and the catastrophic potential of hurricane losses, they have been removed from the actual data. A separate provision for hurricane losses was included based on modeled hurricane losses developed by AIR Worldwide.

Exhibit (1)(d)

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

EARNED PREMIUM AT PRESENT RATES CALCULATION

For ISO (excluding Stat Agent Plan), ISS, NISS, and FAIR and Beach Plan data, earned premium at present rates by coverage is calculated by the following formula for each exposure:

Fire Premium = Territory Base Rate x Amount of Insurance Factor x Optional Coverage Factor

Extended Coverage Premium = Territory Base Rate x Amount of Insurance Factor x Optional Coverage Factor

The results are then summed over all territories to generate aggregate earned premium at present rates.

A sample calculation for a single insured is shown below. This sample insured is in territory 32, Coverage A, $30,000 amount of insurance, protection class 8, masonry construction, Extended Coverage policy form 1.

Fire:

(1)	Territory 32, Coverage A, protection class 8, masonry construction base rate	53
(2)	Amount of insurance factor for $30,000	1.60
(3)	Optional Coverage Factor	1.00
(4)	Earned premium at present rates (1)x(2)x(3)	84.80

Extended Coverage:

(1)	Territory 32, Coverage A, masonry construction, policy form 1 base rate	25
(2)	Amount of insurance factor for $30,000	1.79
(3)	Optional Coverage Factor	1.00
(4)	Earned premium at present rates (1)x(2)x(3)	44.75

For the AAIS and ISO Stat Agent Plan data, earned premium at current rates by coverage is calculated by applying “on-level” factors to the reported premiums. The on-level factors are derived using the standard “parallelogram method” which accounts for past approved rate changes and their varying effect by year.

The results of these two calculations are then summed to obtain the one earned premium at present rates required for the statewide, territory and class rate level analyses.

EXHIBIT (1) (e)

TOP TEN DWELLING FIRE INSURANCE WRITERS

COMPANY NAME		2009 (a) WRITTEN PREMIUM	2009 WRITTEN PREMIUM MARKET SHARE	2009 (a) EARNED PREMIUM	2009 EARNED PREMIUM MARKET SHARE
North Carolina Farm Bureau Mutual Insurance Company		23,452,572	23.62%	22,933,835	24.36%
Auto Owners Insurance Company		20,303,313	20.45%	19,538,011	20.75%
American Security Insurance Company		21,182,495	21.34%	19,069,820	20.26%
Nationwide Mutual Fire Insurance Company		8,117,067	8.18%	8,443,380	8.97%
United Services Automobile Association		4,056,690	4.09%	3,770,904	4.01%
Cincinnati Insurance Company		2,842,154	2.86%	2,909,451	3.09%
Foremost Insurance Company		3,220,837	3.24%	2,778,931	2.95%
Automobile Insurance Company of Hartford		2,031,278	2.05%	2,056,161	2.18%
Erie Insurance Exchange		1,407,216	1.42%	1,377,612	1.46%
Peerless Insurance Company		998,353	1.01%	1,118,979	1.19%
	Total	87,611,975	88.24%	83,997,084	89.23%
	Grand Total	99,284,365		94,139,837	

(a) Per the 2009 Dwelling Expense Experience
standard & non standard

Note: Beach and FAIR Plan data are not included.

EXHIBIT (1) (e)

TOP TEN DWELLING EXTENDED COVERAGE INSURANCE WRITERS

COMPANY NAME	2009 (a) WRITTEN PREMIUM	2009 WRITTEN PREMIUM MARKET SHARE	2009 (a) EARNED PREMIUM	2009 EARNED PREMIUM MARKET SHARE
North Carolina Farm Bureau Mutual Insurance Company	17,046,795	25.31%	16,633,765	23.81%
Nationwide Mutual Fire Insurance Company	7,948,866	11.80%	8,200,072	11.74%
United Services Automobile Association	7,969,740	11.83%	7,522,165	10.77%
American Security Insurance Company	6,299,198	9.35%	6,088,274	8.72%
Firemans Fund Insurance Company	3,330,529	4.95%	5,000,837	7.16%
Peerless Insurance Company	1,885,193	2.80%	3,738,921	5.35%
Cincinnati Insurance Company	2,695,056	4.00%	2,683,876	3.84%
Automobile Insurance Company of Hartford	2,080,585	3.09%	2,109,247	3.02%
Pennsylvania National Mutual Casualty Insurance Company	1,325,896	1.97%	1,664,490	2.38%
Liberty Mutual Insurance Company	1,742,187	2.59%	1,577,788	2.26%
Total	52,324,045	77.69%	55,219,435	79.05%
Grand Total	67,348,172		69,850,929	

(a) Per the 2009 Dwelling Expense Experience

Note: Beach and FAIR Plan data are not included.

Not applicable to Dwelling Fire and Extended Coverage insurance.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
LOSSES AND LOSS ADJUSTMENT EXPENSE

The data requested by 11 NCAC 10.1105(1)(i)(i,ii) were not being collected or reported in the experience period. The response to 11 NCAC 10.1105(1), page E-4, provides incurred loss and loss adjustment expense information. The response to 11 NCAC 10.1105(1)(1) provides incurred data by cause of loss. Additional information concerning loss development is provided in the response to 11 NCAC 10.1105(3). Additional information concerning loss adjustment expenses is provided in the response to 11 NCAC 10.1105(7). Additional information concerning loss trend is provided in Section D and in the prefiled testimony of R. Curry and S. Thomas.

(iii)

Year	Fire: Applied Loss Development Factor	Extended Coverage: Applied Loss Development Factor
2003	1.000	1.002
2004	1.000	1.005
2005	0.999	1.008
2006	0.997	1.018
2007	0.990	1.036

(iv)

Year	Fire: Loss Adjustment Expense Percentage	Extended Coverage: Loss Adjustment Expense Percentage
2003	8.3%	9.7%
2004	12.3	12.2
2005	7.9	11.9
2006	8.4	13.2
2007	7.6	13.6

(v)

Year	Fire: Applied Loss Trend Factor	Extended Coverage: Applied Loss Trend Factor
2003	1.395	1.410
2004	1.298	1.312
2005	1.223	1.237
2006	1.153	1.166
2007	1.119	1.132

(vi)

Year	Fire: Trended Incurred Losses and LAE	Extended Coverage: Trended Incurred Losses and LAE
2003	$ 49,977,194	$ 107,450,935
2004	46,071,210	41,715,326
2005	46,633,015	39,798,627
2006	42,570,670	27,184,740
2007	47,755,696	27,176,785

(vii) This information is given in the response to 11 NCAC 10.1105(1), page E-5.

Not applicable to Dwelling Fire and Extended Coverage insurance.

See prefiled testimony of R. Curry, S. Thomas and D. LaLonde.

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

CAUSE OF LOSS DATA

Loss experience by cause of loss is provided on the attached Exhibit (1)(1).

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 05						
WIND AND HAIL	2003	20,296,948	4,295	545.44	11.54	4,726
	2004	2,272,359	610	63.77	1.71	3,725
	2005	3,791,248	895	108.29	2.56	4,236
	2006	852,272	246	24.21	0.70	3,465
	2007	107,566	37	3.06	0.11	2,907
	TOTAL	27,320,393	6,083	153.31	3.41	4,491
WATER DAMAGE AND FREEZING	2003	1,992,067	270	53.53	0.73	7,378
	2004	1,300,231	181	36.49	0.51	7,184
	2005	1,065,050	196	30.42	0.56	5,434
	2006	695,613	150	19.76	0.43	4,637
	2007	1,835,382	210	52.22	0.60	8,740
	TOTAL	6,888,343	1,007	38.65	0.57	6,840
ALL OTHER PD	2003	231,169	36	6.21	0.10	6,421
	2004	65,175	18	1.83	0.05	3,621
	2005	89,012	21	2.54	0.06	4,239
	2006	140,794	23	4.00	0.07	6,121
	2007	298,825	47	8.50	0.13	6,358
	TOTAL	824,975	145	4.63	0.08	5,689
VANDALISM AND MALICIOUS MISCHIEF	2003	16,645	8	0.45	0.02	2,081
	2004	33,425	16	0.94	0.04	2,089
	2005	21,719	15	0.62	0.04	1,448
	2006	45,350	11	1.29	0.03	4,123
	2007	22,443	24	0.64	0.07	935
	TOTAL	139,582	74	0.78	0.04	1,886
UNIDENTIFIED	2003	56,576	17	1.52	0.05	3,328
	2004	10,004	3	0.28	0.01	3,335
	2005	8,665	3	0.25	0.01	2,888
	2006	-	-	-	-	N/A
	2007	1,037	-	0.03	-	N/A
	TOTAL	76,282	23	0.43	0.01	3,317
ALL CAUSES	2003	22,593,405	4,626	607.15	12.43	4,884
	2004	3,681,194	828	103.31	2.32	4,446
	2005	4,975,694	1,130	142.13	3.23	4,403
	2006	1,734,029	430	49.26	1.22	4,033
	2007	2,265,253	318	64.45	0.90	7,123
	TOTAL	35,249,575	7,332	197.80	4.11	4,808

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 06						
WIND AND HAIL	2003	794,469	197	33.69	0.84	4,033
	2004	4,584,359	1,078	207.09	4.87	4,253
	2005	4,890,139	919	227.95	4.28	5,321
	2006	880,398	212	40.17	0.97	4,153
	2007	42,988	22	1.92	0.10	1,954
	TOTAL	11,192,353	2,428	100.35	2.18	4,610
WATER DAMAGE AND FREEZING	2003	678,182	111	28.75	0.47	6,110
	2004	488,825	76	22.08	0.34	6,432
	2005	579,018	90	26.99	0.42	6,434
	2006	757,588	79	34.57	0.36	9,590
	2007	888,736	116	39.60	0.52	7,662
	TOTAL	3,392,349	472	30.42	0.42	7,187
ALL OTHER PD	2003	24,323	7	1.03	0.03	3,475
	2004	128,082	15	5.79	0.07	8,539
	2005	12,006	3	0.56	0.01	4,002
	2006	51,111	15	2.33	0.07	3,407
	2007	18,245	11	0.81	0.05	1,659
	TOTAL	233,767	51	2.10	0.05	4,584
VANDALISM AND MALICIOUS MISCHIEF	2003	4,925	5	0.21	0.02	985
	2004	38,101	2	1.72	0.01	19,051
	2005	1,287	2	0.06	0.01	644
	2006	14,192	6	0.65	0.03	2,365
	2007	59,456	13	2.65	0.06	4,574
	TOTAL	117,961	28	1.06	0.03	4,213
UNIDENTIFIED	2003	3,770	1	0.16	0.00	3,770
	2004	14,277	4	0.64	0.02	3,569
	2005	9,563	3	0.45	0.01	3,188
	2006	-	-	-	-	N/A
	2007	462	-	0.02	-	N/A
	TOTAL	28,072	8	0.25	0.01	3,509
ALL CAUSES	2003	1,505,669	321	63.84	1.36	4,691
	2004	5,253,644	1,175	237.32	5.31	4,471
	2005	5,492,013	1,017	256.00	4.74	5,400
	2006	1,703,289	312	77.72	1.42	5,459
	2007	1,009,887	162	45.00	0.72	6,234
	TOTAL	14,964,502	2,987	134.17	2.68	5,010

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 32						
WIND AND HAIL	2003	307,556	115	18.26	0.68	2,674
	2004	104,564	35	6.38	0.21	2,988
	2005	61,104	17	3.81	0.11	3,594
	2006	134,804	51	8.48	0.32	2,643
	2007	117,354	41	7.54	0.26	2,862
	TOTAL	725,382	259	8.99	0.32	2,801
WATER DAMAGE AND FREEZING	2003	679,301	78	40.33	0.46	8,709
	2004	295,204	62	18.02	0.38	4,761
	2005	238,193	61	14.87	0.38	3,905
	2006	307,258	72	19.33	0.45	4,267
	2007	334,791	68	21.51	0.44	4,923
	TOTAL	1,854,747	341	22.98	0.42	5,439
ALL OTHER PD	2003	184,900	45	10.98	0.27	4,109
	2004	169,163	47	10.32	0.29	3,599
	2005	212,207	39	13.25	0.24	5,441
	2006	184,975	43	11.64	0.27	4,302
	2007	410,161	68	26.35	0.44	6,032
	TOTAL	1,161,406	242	14.39	0.30	4,799
VANDALISM AND MALICIOUS MISCHIEF	2003	16,434	17	0.98	0.10	967
	2004	54,097	12	3.30	0.07	4,508
	2005	29,889	14	1.87	0.09	2,135
	2006	33,475	13	2.11	0.08	2,575
	2007	64,052	24	4.12	0.15	2,669
	TOTAL	197,947	80	2.45	0.10	2,474
UNIDENTIFIED	2003	(1,141)	3	(0.07)	0.02	(380)
	2004	1,698	1	0.10	0.01	1,698
	2005	5,344	2	0.33	0.01	2,672
	2006	13,166	4	0.83	0.03	3,292
	2007	1,052	1	0.07	0.01	1,052
	TOTAL	20,119	11	0.25	0.01	1,829
ALL CAUSES	2003	1,187,050	258	70.48	1.53	4,601
	2004	624,726	157	38.13	0.96	3,979
	2005	546,737	133	34.13	0.83	4,111
	2006	673,678	183	42.39	1.15	3,681
	2007	927,410	202	59.58	1.30	4,591
	TOTAL	3,959,601	933	49.06	1.16	4,244

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 34						
WIND AND HAIL	2003	280,584	176	12.34	0.77	1,594
	2004	269,923	160	12.24	0.73	1,687
	2005	183,532	85	8.36	0.39	2,159
	2006	170,318	76	7.88	0.35	2,241
	2007	101,141	44	4.73	0.21	2,299
	TOTAL	1,005,498	541	9.16	0.49	1,859
WATER DAMAGE AND FREEZING	2003	309,502	61	13.61	0.27	5,074
	2004	82,980	32	3.76	0.15	2,593
	2005	279,627	61	12.74	0.28	4,584
	2006	638,422	92	29.55	0.43	6,939
	2007	262,511	68	12.27	0.32	3,860
	TOTAL	1,573,042	314	14.33	0.29	5,010
ALL OTHER PD	2003	79,317	62	3.49	0.27	1,279
	2004	78,272	35	3.55	0.16	2,236
	2005	110,495	65	5.03	0.30	1,700
	2006	88,772	42	4.11	0.19	2,114
	2007	119,317	69	5.58	0.32	1,729
	TOTAL	476,173	273	4.34	0.25	1,744
VANDALISM AND MALICIOUS MISCHIEF	2003	28,293	25	1.24	0.11	1,132
	2004	56,275	25	2.55	0.11	2,251
	2005	26,914	12	1.23	0.05	2,243
	2006	54,621	23	2.53	0.11	2,375
	2007	42,610	30	1.99	0.14	1,420
	TOTAL	208,713	115	1.90	0.10	1,815
UNIDENTIFIED	2003	2,655	5	0.12	0.02	531
	2004	1,230	5	0.06	0.02	246
	2005	3,686	3	0.17	0.01	1,229
	2006	204	1	0.01	0.00	204
	2007	2,207	2	0.10	0.01	1,104
	TOTAL	9,982	16	0.09	0.01	624
ALL CAUSES	2003	700,351	329	30.81	1.45	2,129
	2004	488,680	257	22.15	1.17	1,901
	2005	604,254	226	27.53	1.03	2,674
	2006	952,337	234	44.08	1.08	4,070
	2007	527,786	213	24.66	1.00	2,478
	TOTAL	3,273,408	1,259	29.83	1.15	2,600

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 36						
WIND AND HAIL	2003	153,788	70	9.79	0.45	2,197
	2004	237,443	86	15.75	0.57	2,761
	2005	56,945	33	3.73	0.22	1,726
	2006	214,459	84	13.97	0.55	2,553
	2007	198,094	44	12.66	0.28	4,502
	TOTAL	860,729	317	11.17	0.41	2,715
WATER DAMAGE AND FREEZING	2003	272,005	63	17.31	0.40	4,318
	2004	110,277	28	7.32	0.19	3,938
	2005	160,147	56	10.50	0.37	2,860
	2006	153,096	42	9.97	0.27	3,645
	2007	173,074	48	11.06	0.31	3,606
	TOTAL	868,599	237	11.28	0.31	3,665
ALL OTHER PD	2003	274,284	147	17.46	0.94	1,866
	2004	68,580	40	4.55	0.27	1,715
	2005	161,917	44	10.62	0.29	3,680
	2006	169,737	73	11.05	0.48	2,325
	2007	181,967	66	11.63	0.42	2,757
	TOTAL	856,485	370	11.12	0.48	2,315
VANDALISM AND MALICIOUS MISCHIEF	2003	21,022	13	1.34	0.08	1,617
	2004	15,309	11	1.02	0.07	1,392
	2005	26,617	7	1.75	0.05	3,802
	2006	15,263	9	0.99	0.06	1,696
	2007	33,224	15	2.12	0.10	2,215
	TOTAL	111,435	55	1.45	0.07	2,026
UNIDENTIFIED	2003	(7,934)	2	(0.50)	0.01	(3,967)
	2004	1,176	1	0.08	0.01	1,176
	2005	1,328	1	0.09	0.01	1,328
	2006	1,841	3	0.12	0.02	614
	2007	4,206	2	0.27	0.01	2,103
	TOTAL	617	9	0.01	0.01	69
ALL CAUSES	2003	713,165	295	45.39	1.88	2,418
	2004	432,785	166	28.71	1.10	2,607
	2005	406,954	141	26.69	0.92	2,886
	2006	554,396	211	36.11	1.37	2,627
	2007	590,565	175	37.75	1.12	3,375
	TOTAL	2,697,865	988	35.02	1.28	2,731

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 38						
WIND AND HAIL	2003	279,211	90	16.52	0.53	3,102
	2004	340,459	93	20.66	0.56	3,661
	2005	107,312	39	6.63	0.24	2,752
	2006	278,183	62	16.96	0.38	4,487
	2007	404,157	84	23.41	0.49	4,811
	TOTAL	1,409,322	368	16.94	0.44	3,830
WATER DAMAGE AND FREEZING	2003	328,666	74	19.45	0.44	4,441
	2004	248,761	55	15.10	0.33	4,523
	2005	378,977	62	23.43	0.38	6,113
	2006	159,680	61	9.73	0.37	2,618
	2007	293,124	60	16.98	0.35	4,885
	TOTAL	1,409,208	312	16.93	0.37	4,517
ALL OTHER PD	2003	139,323	63	8.24	0.37	2,211
	2004	277,879	71	16.87	0.43	3,914
	2005	184,939	61	11.43	0.38	3,032
	2006	187,702	76	11.44	0.46	2,470
	2007	275,488	91	15.96	0.53	3,027
	TOTAL	1,065,331	362	12.80	0.43	2,943
VANDALISM AND MALICIOUS MISCHIEF	2003	18,325	20	1.08	0.12	916
	2004	114,461	37	6.95	0.22	3,094
	2005	39,598	16	2.45	0.10	2,475
	2006	124,836	37	7.61	0.23	3,374
	2007	170,966	61	9.90	0.35	2,803
	TOTAL	468,186	171	5.63	0.21	2,738
UNIDENTIFIED	2003	(2,699)	1	(0.16)	0.01	(2,699)
	2004	2,675	1	0.16	0.01	2,675
	2005	1,240	-	0.08	-	N/A
	2006	-	-	-	-	N/A
	2007	5,568	2	0.32	0.01	2,784
	TOTAL	6,784	4	0.08	0.00	1,696
ALL CAUSES	2003	762,826	248	45.14	1.47	3,076
	2004	984,235	257	59.74	1.56	3,830
	2005	712,066	178	44.02	1.10	4,000
	2006	750,401	236	45.75	1.44	3,180
	2007	1,149,303	298	66.57	1.73	3,857
	TOTAL	4,358,831	1,217	52.38	1.46	3,582

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 39						
WIND AND HAIL	2003	510,035	190	26.08	0.97	2,684
	2004	478,739	271	23.16	1.31	1,767
	2005	343,807	105	15.94	0.49	3,274
	2006	488,368	172	22.32	0.79	2,839
	2007	230,910	95	10.67	0.44	2,431
	TOTAL	2,051,859	833	19.48	0.79	2,463
WATER DAMAGE AND FREEZING	2003	180,675	59	9.24	0.30	3,062
	2004	169,116	40	8.18	0.19	4,228
	2005	262,166	52	12.16	0.24	5,042
	2006	316,375	53	14.46	0.24	5,969
	2007	278,461	47	12.86	0.22	5,925
	TOTAL	1,206,793	251	11.46	0.24	4,808
ALL OTHER PD	2003	259,532	62	13.27	0.32	4,186
	2004	181,273	60	8.77	0.29	3,021
	2005	173,555	56	8.05	0.26	3,099
	2006	212,189	75	9.70	0.34	2,829
	2007	230,260	82	10.64	0.38	2,808
	TOTAL	1,056,809	335	10.03	0.32	3,155
VANDALISM AND MALICIOUS MISCHIEF	2003	26,993	7	1.38	0.04	3,856
	2004	52,452	17	2.54	0.08	3,085
	2005	50,845	15	2.36	0.07	3,390
	2006	70,040	25	3.20	0.11	2,802
	2007	127,234	21	5.88	0.10	6,059
	TOTAL	327,564	85	3.11	0.08	3,854
UNIDENTIFIED	2003	3,064	7	0.16	0.04	438
	2004	3,639	4	0.18	0.02	910
	2005	328	4	0.02	0.02	82
	2006	397	2	0.02	0.01	199
	2007	2,470	-	0.11	-	N/A
	TOTAL	9,898	17	0.09	0.02	582
ALL CAUSES	2003	980,299	325	50.13	1.66	3,016
	2004	885,219	392	42.82	1.90	2,258
	2005	830,701	232	38.52	1.08	3,581
	2006	1,087,369	327	49.69	1.49	3,325
	2007	869,335	245	40.16	1.13	3,548
	TOTAL	4,652,923	1,521	44.18	1.44	3,059

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 41						
WIND AND HAIL	2003	1,065,198	594	38.96	2.17	1,793
	2004	640,259	396	23.63	1.46	1,617
	2005	352,123	248	12.67	0.89	1,420
	2006	367,148	191	12.99	0.68	1,922
	2007	115,981	84	4.14	0.30	1,381
	TOTAL	2,540,709	1,513	18.34	1.09	1,679
WATER DAMAGE AND FREEZING	2003	22,011	21	0.81	0.08	1,048
	2004	80,759	28	2.98	0.10	2,884
	2005	80,803	29	2.91	0.10	2,786
	2006	20,529	14	0.73	0.05	1,466
	2007	45,239	13	1.61	0.05	3,480
	TOTAL	249,341	105	1.80	0.08	2,375
ALL OTHER PD	2003	42,423	34	1.55	0.12	1,248
	2004	48,637	38	1.80	0.14	1,280
	2005	28,994	26	1.04	0.09	1,115
	2006	72,375	36	2.56	0.13	2,010
	2007	46,476	20	1.66	0.07	2,324
	TOTAL	238,905	154	1.72	0.11	1,551
VANDALISM AND MALICIOUS MISCHIEF	2003	5,333	6	0.20	0.02	889
	2004	3,218	5	0.12	0.02	644
	2005	3,358	6	0.12	0.02	560
	2006	9,740	5	0.34	0.02	1,948
	2007	1,536	3	0.05	0.01	512
	TOTAL	23,185	25	0.17	0.02	927
UNIDENTIFIED	2003	12,108	6	0.44	0.02	2,018
	2004	(3,191)	6	(0.12)	0.02	(532)
	2005	2,546	2	0.09	0.01	1,273
	2006	3,052	1	0.11	0.00	3,052
	2007	96	-	0.00	-	N/A
	TOTAL	14,611	15	0.11	0.01	974
ALL CAUSES	2003	1,147,073	661	41.95	2.42	1,735
	2004	769,682	473	28.41	1.75	1,627
	2005	467,824	311	16.83	1.12	1,504
	2006	472,844	247	16.73	0.87	1,914
	2007	209,328	120	7.47	0.43	1,744
	TOTAL	3,066,751	1,812	22.14	1.31	1,692

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 42						
WIND AND HAIL	2003	1,137,430	455	23.06	0.92	2,500
	2004	2,386,169	1,063	49.09	2.19	2,245
	2005	1,729,047	855	35.04	1.73	2,022
	2006	522,098	230	10.02	0.44	2,270
	2007	168,667	74	3.11	0.14	2,279
	TOTAL	5,943,411	2,677	23.43	1.06	2,220
WATER DAMAGE AND FREEZING	2003	425,741	96	8.63	0.19	4,435
	2004	306,132	90	6.30	0.19	3,401
	2005	478,818	92	9.70	0.19	5,205
	2006	380,451	74	7.30	0.14	5,141
	2007	382,267	90	7.04	0.17	4,247
	TOTAL	1,973,409	442	7.78	0.17	4,465
ALL OTHER PD	2003	251,072	43	5.09	0.09	5,839
	2004	131,865	51	2.71	0.10	2,586
	2005	169,370	68	3.43	0.14	2,491
	2006	190,550	40	3.66	0.08	4,764
	2007	89,426	42	1.65	0.08	2,129
	TOTAL	832,283	244	3.28	0.10	3,411
VANDALISM AND MALICIOUS MISCHIEF	2003	13,736	12	0.28	0.02	1,145
	2004	53,038	10	1.09	0.02	5,304
	2005	7,406	7	0.15	0.01	1,058
	2006	39,070	22	0.75	0.04	1,776
	2007	30,139	8	0.56	0.01	3,767
	TOTAL	143,389	59	0.57	0.02	2,430
UNIDENTIFIED	2003	3,248	3	0.07	0.01	1,083
	2004	30,480	14	0.63	0.03	2,177
	2005	9,233	11	0.19	0.02	839
	2006	-	-	-	-	N/A
	2007	307	1	0.01	0.00	307
	TOTAL	43,268	29	0.17	0.01	1,492
ALL CAUSES	2003	1,831,227	609	37.12	1.23	3,007
	2004	2,907,684	1,228	59.82	2.53	2,368
	2005	2,393,874	1,033	48.51	2.09	2,317
	2006	1,132,169	366	21.73	0.70	3,093
	2007	670,806	215	12.36	0.40	3,120
	TOTAL	8,935,760	3,451	35.23	1.36	2,589

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 43						
WIND AND HAIL	2003	16,076,202	4,527	459.92	12.95	3,551
	2004	625,729	261	17.98	0.75	2,397
	2005	2,935,931	1,041	81.31	2.88	2,820
	2006	935,935	411	24.36	1.07	2,277
	2007	175,571	90	4.39	0.23	1,951
	TOTAL	20,749,368	6,330	112.62	3.44	3,278
WATER DAMAGE AND FREEZING	2003	328,236	72	9.39	0.21	4,559
	2004	411,012	62	11.81	0.18	6,629
	2005	238,926	66	6.62	0.18	3,620
	2006	347,679	55	9.05	0.14	6,321
	2007	239,563	58	6.00	0.15	4,130
	TOTAL	1,565,416	313	8.50	0.17	5,001
ALL OTHER PD	2003	286,950	87	8.21	0.25	3,298
	2004	76,838	34	2.21	0.10	2,260
	2005	97,226	33	2.69	0.09	2,946
	2006	66,449	33	1.73	0.09	2,014
	2007	75,832	31	1.90	0.08	2,446
	TOTAL	603,295	218	3.27	0.12	2,767
VANDALISM AND MALICIOUS MISCHIEF	2003	20,255	16	0.58	0.05	1,266
	2004	3,334	5	0.10	0.01	667
	2005	12,476	8	0.35	0.02	1,560
	2006	14,857	5	0.39	0.01	2,971
	2007	26,195	5	0.66	0.01	5,239
	TOTAL	77,117	39	0.42	0.02	1,977
UNIDENTIFIED	2003	95,413	40	2.73	0.11	2,385
	2004	15,481	12	0.44	0.03	1,290
	2005	1,514	6	0.04	0.02	252
	2006	1,306	2	0.03	0.01	653
	2007	237	-	0.01	-	N/A
	TOTAL	113,951	60	0.62	0.03	1,899
ALL CAUSES	2003	16,807,056	4,742	480.83	13.57	3,544
	2004	1,132,394	374	32.54	1.07	3,028
	2005	3,286,073	1,154	91.00	3.20	2,848
	2006	1,366,226	506	35.56	1.32	2,700
	2007	517,398	184	12.95	0.46	2,812
	TOTAL	23,109,147	6,960	125.43	3.78	3,320

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 44						
WIND AND HAIL	2003	135,769	58	23.67	1.01	2,341
	2004	147,541	81	19.91	1.09	1,821
	2005	134,087	71	14.92	0.79	1,889
	2006	124,229	67	13.67	0.74	1,854
	2007	70,555	38	7.80	0.42	1,857
	TOTAL	612,181	315	15.20	0.78	1,943
WATER DAMAGE AND FREEZING	2003	49,818	11	8.69	0.19	4,529
	2004	26,693	9	3.60	0.12	2,966
	2005	18,562	10	2.06	0.11	1,856
	2006	20,730	3	2.28	0.03	6,910
	2007	55,733	8	6.16	0.09	6,967
	TOTAL	171,536	41	4.26	0.10	4,184
ALL OTHER PD	2003	38,248	15	6.67	0.26	2,550
	2004	45,724	13	6.17	0.18	3,517
	2005	25,029	6	2.78	0.07	4,172
	2006	25,584	7	2.81	0.08	3,655
	2007	18,679	14	2.06	0.15	1,334
	TOTAL	153,264	55	3.81	0.14	2,787
VANDALISM AND MALICIOUS MISCHIEF	2003	9,559	2	1.67	0.03	4,780
	2004	1,334	-	0.18	-	N/A
	2005	7,568	3	0.84	0.03	2,523
	2006	-	-	-	-	N/A
	2007	16,132	6	1.78	0.07	2,689
	TOTAL	34,593	11	0.86	0.03	3,145
UNIDENTIFIED	2003	3,990	2	0.70	0.03	1,995
	2004	603	1	0.08	0.01	603
	2005	3,577	2	0.40	0.02	1,789
	2006	-	-	-	-	N/A
	2007	74	-	0.01	-	N/A
	TOTAL	8,244	5	0.20	0.01	1,649
ALL CAUSES	2003	237,384	88	41.39	1.53	2,698
	2004	221,895	104	29.94	1.40	2,134
	2005	188,823	92	21.00	1.02	2,052
	2006	170,543	77	18.76	0.85	2,215
	2007	161,173	66	17.81	0.73	2,442
	TOTAL	979,818	427	24.33	1.06	2,295

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 45						
WIND AND HAIL	2003	3,582,793	1,436	110.62	4.43	2,495
	2004	575,115	315	16.02	0.88	1,826
	2005	968,880	467	24.85	1.20	2,075
	2006	695,467	354	17.28	0.88	1,965
	2007	650,815	246	16.15	0.61	2,646
	TOTAL	6,473,070	2,818	34.47	1.50	2,297
WATER DAMAGE AND FREEZING	2003	135,843	56	4.19	0.17	2,426
	2004	105,967	47	2.95	0.13	2,255
	2005	176,054	68	4.52	0.17	2,589
	2006	248,794	74	6.18	0.18	3,362
	2007	192,010	46	4.77	0.11	4,174
	TOTAL	858,668	291	4.57	0.15	2,951
ALL OTHER PD	2003	196,775	92	6.08	0.28	2,139
	2004	132,164	60	3.68	0.17	2,203
	2005	207,982	60	5.33	0.15	3,466
	2006	207,463	64	5.15	0.16	3,242
	2007	331,100	72	8.22	0.18	4,599
	TOTAL	1,075,484	348	5.73	0.19	3,090
VANDALISM AND MALICIOUS MISCHIEF	2003	12,526	10	0.39	0.03	1,253
	2004	13,526	11	0.38	0.03	1,230
	2005	8,471	9	0.22	0.02	941
	2006	33,902	16	0.84	0.04	2,119
	2007	3,339	5	0.08	0.01	668
	TOTAL	71,764	51	0.38	0.03	1,407
UNIDENTIFIED	2003	17,516	11	0.54	0.03	1,592
	2004	8,186	7	0.23	0.02	1,169
	2005	14,123	9	0.36	0.02	1,569
	2006	7,062	4	0.18	0.01	1,766
	2007	540	-	0.01	-	N/A
	TOTAL	47,427	31	0.25	0.02	1,530
ALL CAUSES	2003	3,945,453	1,605	121.82	4.96	2,458
	2004	834,958	440	23.26	1.23	1,898
	2005	1,375,510	613	35.28	1.57	2,244
	2006	1,192,688	512	29.63	1.27	2,329
	2007	1,177,804	369	29.23	0.92	3,192
	TOTAL	8,526,413	3,539	45.40	1.88	2,409

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 46						
WIND AND HAIL	2003	1,218,002	484	106.51	4.23	2,517
	2004	184,916	85	15.97	0.73	2,175
	2005	24,654	17	2.09	0.14	1,450
	2006	118,675	57	10.04	0.48	2,082
	2007	104,539	62	8.86	0.53	1,686
	TOTAL	1,650,786	705	28.24	1.21	2,342
WATER DAMAGE AND FREEZING	2003	48,729	20	4.26	0.17	2,436
	2004	16,164	9	1.40	0.08	1,796
	2005	18,745	10	1.59	0.08	1,875
	2006	13,145	5	1.11	0.04	2,629
	2007	11,746	7	1.00	0.06	1,678
	TOTAL	108,529	51	1.86	0.09	2,128
ALL OTHER PD	2003	70,951	36	6.20	0.31	1,971
	2004	64,350	17	5.56	0.15	3,785
	2005	21,850	10	1.85	0.08	2,185
	2006	62,126	14	5.25	0.12	4,438
	2007	47,673	20	4.04	0.17	2,384
	TOTAL	266,950	97	4.57	0.17	2,752
VANDALISM AND MALICIOUS MISCHIEF	2003	4,494	3	0.39	0.03	1,498
	2004	3,516	1	0.30	0.01	3,516
	2005	-	-	-	-	N/A
	2006	544	2	0.05	0.02	272
	2007	21,297	3	1.80	0.03	7,099
	TOTAL	29,851	9	0.51	0.02	3,317
UNIDENTIFIED	2003	5,920	8	0.52	0.07	740
	2004	1,200	2	0.10	0.02	600
	2005	467	1	0.04	0.01	467
	2006	4,072	1	0.34	0.01	4,072
	2007	394	1	0.03	0.01	394
	TOTAL	12,053	13	0.21	0.02	927
ALL CAUSES	2003	1,348,096	551	117.88	4.82	2,447
	2004	270,146	114	23.33	0.98	2,370
	2005	65,716	38	5.56	0.32	1,729
	2006	198,562	79	16.79	0.67	2,513
	2007	185,649	93	15.73	0.79	1,996
	TOTAL	2,068,169	875	35.38	1.50	2,364

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 47						
WIND AND HAIL	2003	5,362,606	2,179	107.16	4.35	2,461
	2004	885,730	434	17.12	0.84	2,041
	2005	423,982	222	8.06	0.42	1,910
	2006	865,583	377	16.32	0.71	2,296
	2007	425,468	166	8.05	0.31	2,563
	TOTAL	7,963,369	3,378	30.60	1.30	2,357
WATER DAMAGE AND FREEZING	2003	218,948	90	4.38	0.18	2,433
	2004	147,752	75	2.86	0.14	1,970
	2005	298,675	65	5.68	0.12	4,595
	2006	323,536	83	6.10	0.16	3,898
	2007	245,811	68	4.65	0.13	3,615
	TOTAL	1,234,722	381	4.74	0.15	3,241
ALL OTHER PD	2003	313,603	144	6.27	0.29	2,178
	2004	185,054	87	3.58	0.17	2,127
	2005	322,052	98	6.12	0.19	3,286
	2006	248,800	91	4.69	0.17	2,734
	2007	263,830	91	4.99	0.17	2,899
	TOTAL	1,333,339	511	5.12	0.20	2,609
VANDALISM AND MALICIOUS MISCHIEF	2003	20,186	16	0.40	0.03	1,262
	2004	24,706	13	0.48	0.03	1,900
	2005	32,312	16	0.61	0.03	2,020
	2006	28,675	14	0.54	0.03	2,048
	2007	36,025	22	0.68	0.04	1,638
	TOTAL	141,904	81	0.55	0.03	1,752
UNIDENTIFIED	2003	44,698	38	0.89	0.08	1,176
	2004	14,272	12	0.28	0.02	1,189
	2005	13,191	6	0.25	0.01	2,199
	2006	2,897	2	0.05	0.00	1,449
	2007	4,033	1	0.08	0.00	4,033
	TOTAL	79,091	59	0.30	0.02	1,341
ALL CAUSES	2003	5,960,041	2,467	119.10	4.93	2,416
	2004	1,257,514	621	24.31	1.20	2,025
	2005	1,090,212	407	20.73	0.77	2,679
	2006	1,469,491	567	27.71	1.07	2,592
	2007	975,167	348	18.44	0.66	2,802
	TOTAL	10,752,425	4,410	41.31	1.69	2,438

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 53						
WIND AND HAIL	2003	801,477	309	41.54	1.60	2,594
	2004	153,879	79	7.84	0.40	1,948
	2005	104,627	40	5.27	0.20	2,616
	2006	176,591	57	8.72	0.28	3,098
	2007	194,453	54	9.69	0.27	3,601
	TOTAL	1,431,027	539	14.44	0.54	2,655
WATER DAMAGE AND FREEZING	2003	186,746	64	9.68	0.33	2,918
	2004	159,269	51	8.11	0.26	3,123
	2005	324,518	56	16.34	0.28	5,795
	2006	246,578	58	12.17	0.29	4,251
	2007	393,327	53	19.59	0.26	7,421
	TOTAL	1,310,438	282	13.22	0.28	4,647
ALL OTHER PD	2003	133,401	54	6.91	0.28	2,470
	2004	125,953	36	6.41	0.18	3,499
	2005	188,121	31	9.47	0.16	6,068
	2006	185,663	59	9.16	0.29	3,147
	2007	317,461	45	15.81	0.22	7,055
	TOTAL	950,599	225	9.59	0.23	4,225
VANDALISM AND MALICIOUS MISCHIEF	2003	8,973	7	0.47	0.04	1,282
	2004	28,144	8	1.43	0.04	3,518
	2005	5,522	5	0.28	0.03	1,104
	2006	20,347	14	1.00	0.07	1,453
	2007	1,640	1	0.08	0.00	1,640
	TOTAL	64,626	35	0.65	0.04	1,846
UNIDENTIFIED	2003	27,051	19	1.40	0.10	1,424
	2004	5,335	3	0.27	0.02	1,778
	2005	1,890	1	0.10	0.01	1,890
	2006	3,193	1	0.16	0.00	3,193
	2007	5,698	3	0.28	0.01	1,899
	TOTAL	43,167	27	0.44	0.03	1,599
ALL CAUSES	2003	1,157,648	453	59.99	2.35	2,556
	2004	472,580	177	24.06	0.90	2,670
	2005	624,678	133	31.45	0.67	4,697
	2006	632,372	189	31.21	0.93	3,346
	2007	912,579	156	45.45	0.78	5,850
	TOTAL	3,799,857	1,108	38.33	1.12	3,429

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 57						
WIND AND HAIL	2003	1,932,696	777	51.57	2.07	2,487
	2004	601,172	312	16.41	0.85	1,927
	2005	215,804	99	6.14	0.28	2,180
	2006	475,582	212	13.68	0.61	2,243
	2007	526,875	216	15.26	0.63	2,439
	TOTAL	3,752,129	1,616	21.01	0.91	2,322
WATER DAMAGE AND FREEZING	2003	162,711	81	4.34	0.22	2,009
	2004	190,847	50	5.21	0.14	3,817
	2005	310,282	51	8.83	0.15	6,084
	2006	192,697	64	5.54	0.18	3,011
	2007	548,008	62	15.87	0.18	8,839
	TOTAL	1,404,545	308	7.87	0.17	4,560
ALL OTHER PD	2003	399,438	173	10.66	0.46	2,309
	2004	368,184	107	10.05	0.29	3,441
	2005	339,130	81	9.65	0.23	4,187
	2006	309,545	94	8.90	0.27	3,293
	2007	418,745	126	12.13	0.36	3,323
	TOTAL	1,835,042	581	10.28	0.33	3,158
VANDALISM AND MALICIOUS MISCHIEF	2003	24,173	10	0.65	0.03	2,417
	2004	25,920	14	0.71	0.04	1,851
	2005	35,800	20	1.02	0.06	1,790
	2006	27,649	11	0.80	0.03	2,514
	2007	35,772	11	1.04	0.03	3,252
	TOTAL	149,314	66	0.84	0.04	2,262
UNIDENTIFIED	2003	7,616	21	0.20	0.06	363
	2004	22,531	14	0.61	0.04	1,609
	2005	5,183	4	0.15	0.01	1,296
	2006	21,275	6	0.61	0.02	3,546
	2007	9,386	3	0.27	0.01	3,129
	TOTAL	65,991	48	0.37	0.03	1,375
ALL CAUSES	2003	2,526,634	1,062	67.42	2.83	2,379
	2004	1,208,654	497	32.99	1.36	2,432
	2005	906,199	255	25.79	0.73	3,554
	2006	1,026,748	387	29.53	1.11	2,653
	2007	1,538,786	418	44.57	1.21	3,681
	TOTAL	7,207,021	2,619	40.36	1.47	2,752

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
TERRITORY 60						
WIND AND HAIL	2003	3,493,927	1,455	27.15	1.13	2,401
	2004	4,283,870	1,552	34.37	1.25	2,760
	2005	1,864,001	770	14.79	0.61	2,421
	2006	3,126,326	1,100	24.67	0.87	2,842
	2007	4,549,616	1,593	35.54	1.24	2,856
	TOTAL	17,317,740	6,470	27.31	1.02	2,677
WATER DAMAGE AND FREEZING	2003	1,288,073	267	10.01	0.21	4,824
	2004	1,301,187	250	10.44	0.20	5,205
	2005	1,437,933	241	11.41	0.19	5,967
	2006	1,340,955	238	10.58	0.19	5,634
	2007	1,348,606	232	10.53	0.18	5,813
	TOTAL	6,716,754	1,228	10.59	0.19	5,470
ALL OTHER PD	2003	1,011,500	377	7.86	0.29	2,683
	2004	1,059,079	329	8.50	0.26	3,219
	2005	1,300,434	361	10.32	0.29	3,602
	2006	895,750	252	7.07	0.20	3,555
	2007	1,077,700	319	8.42	0.25	3,378
	TOTAL	5,344,463	1,638	8.43	0.26	3,263
VANDALISM AND MALICIOUS MISCHIEF	2003	247,334	48	1.92	0.04	5,153
	2004	231,710	58	1.86	0.05	3,995
	2005	172,762	46	1.37	0.04	3,756
	2006	107,436	46	0.85	0.04	2,336
	2007	463,528	75	3.62	0.06	6,180
	TOTAL	1,222,770	273	1.93	0.04	4,479
UNIDENTIFIED	2003	23,745	24	0.18	0.02	989
	2004	36,150	18	0.29	0.01	2,008
	2005	9,569	5	0.08	0.00	1,914
	2006	8,269	5	0.07	0.00	1,654
	2007	5,920	5	0.05	0.00	1,184
	TOTAL	83,653	57	0.13	0.01	1,468
ALL CAUSES	2003	6,064,579	2,171	47.13	1.69	2,793
	2004	6,911,996	2,207	55.46	1.77	3,132
	2005	4,784,699	1,423	37.97	1.13	3,362
	2006	5,478,736	1,641	43.24	1.30	3,339
	2007	7,445,370	2,224	58.16	1.74	3,348
	TOTAL	30,685,380	9,666	48.39	1.52	3,175

NORTH CAROLINA DWELLING EXTENDED COVERAGE CAUSE OF LOSS EXPERIENCE

STATEWIDE	YEAR	INCURRED LOSSES	INCURRED CLAIMS	LOSS COST/ HOUSE YEAR	LOSS FREQ/ 100 HOUSE YR	AVG LOSS
WIND AND HAIL	2003	57,428,691	17,407	104.56	3.17	3,299
	2004	18,772,226	6,911	34.35	1.26	2,716
	2005	18,187,223	5,923	32.82	1.07	3,071
	2006	10,426,436	3,959	18.52	0.70	2,634
	2007	8,184,750	2,990	14.41	0.53	2,737
	TOTAL	112,999,326	37,190	40.64	1.34	3,038
WATER DAMAGE AND FREEZING	2003	7,307,254	1,494	13.30	0.27	4,891
	2004	5,441,176	1,145	9.96	0.21	4,752
	2005	6,346,494	1,266	11.45	0.23	5,013
	2006	6,163,126	1,217	10.95	0.22	5,064
	2007	7,528,389	1,254	13.25	0.22	6,004
	TOTAL	32,786,439	6,376	11.79	0.23	5,142
ALL OTHER PD	2003	3,937,209	1,477	7.17	0.27	2,666
	2004	3,206,272	1,058	5.87	0.19	3,031
	2005	3,644,319	1,063	6.58	0.19	3,428
	2006	3,299,585	1,037	5.86	0.18	3,182
	2007	4,221,185	1,214	7.43	0.21	3,477
	TOTAL	18,308,570	5,849	6.58	0.21	3,130
VANDALISM AND MALICIOUS MISCHIEF	2003	499,206	225	0.91	0.04	2,219
	2004	752,566	245	1.38	0.04	3,072
	2005	482,544	201	0.87	0.04	2,401
	2006	639,997	259	1.14	0.05	2,471
	2007	1,155,588	327	2.03	0.06	3,534
	TOTAL	3,529,901	1,257	1.27	0.05	2,808
UNIDENTIFIED	2003	295,596	208	0.54	0.04	1,421
	2004	165,746	108	0.30	0.02	1,535
	2005	91,447	63	0.17	0.01	1,452
	2006	66,734	32	0.12	0.01	2,085
	2007	43,687	21	0.08	0.00	2,080
	TOTAL	663,210	432	0.24	0.02	1,535
ALL CAUSES	2003	69,467,956	20,811	126.48	3.79	3,338
	2004	28,337,986	9,467	51.86	1.73	2,993
	2005	28,752,027	8,516	51.89	1.54	3,376
	2006	20,595,878	6,504	36.58	1.16	3,167
	2007	21,133,599	5,806	37.21	1.02	3,640
	TOTAL	168,287,446	51,104	60.52	1.84	3,293

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
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2. CREDIBILITY FACTOR DEVELOPMENT AND APPLICATION

The volume of North Carolina data is sufficiently large that it is fully credible in both the statewide and class rate level reviews.

To distribute the statewide change by territory, a credibility procedure was used on the five year (non-hurricane for Extended Coverage) loss costs. The credibility standard used was based on the 'frequency with severity modification' model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house years. The full credibility standards are 500,000 house years for Fire and 330,000 house years for Extended Coverage. Partial credibility is calculated using the square root rule:

$\sqrt{\text{five year house years / full credibility standard}}$

For territories 48 and 49, partial credibility was determined based on their combined number of house years.

The Rate Bureau made a Dwelling Fire and Extended Coverage rate filing in 2006 that used same credibility procedure.

See Section D and prefiled testimony of R. Curry and S. Thomas.

3. LOSS DEVELOPMENT FACTOR DERIVATION AND APPLICATION ON BOTH PAID AND INCURRED BASES AND IN BOTH NUMBERS AND DOLLARS OF CLAIMS

(a)-(g) Not applicable to Dwelling Fire and Extended Coverage insurance.

4. TRENDING FACTOR DEVELOPMENT AND APPLICATION

(a) See Section D and prefiled testimony of R. Curry and S. Thomas. The Rate Bureau made a Dwelling Fire and Extended Coverage rate level filing in 2006 that used the same loss trend procedure.

(b) See prefiled testimony of R. Curry and S. Thomas.

(c) Not applicable for Dwelling Fire and Extended Coverage insurance.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
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5. CHANGES IN PREMIUM BASE RESULTING FROM RATING EXPOSURE TRENDS

(a) See Section D and prefiled testimony of R. Curry and S. Thomas. The Rate Bureau made a Dwelling Fire and Extended Coverage rate level filing in 2006 that used same exposure trend procedure.

(b) Not applicable to Dwelling Fire and Extended Coverage insurance.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
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6. LIMITING FACTOR DEVELOPMENT AND APPLICATION

(a), (b), (d) There were no limitations.

(c) See pages C-13 and C-14.

7. OVERHEAD EXPENSE DEVELOPMENT AND APPLICATION OF COMMISSION AND BROKERAGE, OTHER ACQUISITION EXPENSES, GENERAL EXPENSES, TAXES, LICENSES, AND FEES

(a) Exhibit (7)(a) provides all information relating to expense provisions contained in the filing. The Rate Bureau made a Dwelling Fire and Extended Coverage rate level filing in 2006 that used the same procedure for overhead expense development and application of commission and brokerage, other acquisition expense, general expenses, taxes, licenses and fees.

(b) Not applicable to Dwelling Fire and Extended Coverage insurance.

(c) Not applicable to Dwelling Fire and Extended Coverage insurance.

The following provides a description of the derivation of Dwelling Fire and Extended Coverage expense provisions. The underlying expense data are provided by the North Carolina Rate Bureau and are displayed on pages D-25-28.

The filed expense provision methodology makes a distinction between those provisions that require trending and those that do not. For example, since commission and brokerage, and taxes, licenses and fees vary directly with premium, no additional trend is required. In contrast, general expense, other acquisition expense, and loss adjustment expense do not vary directly with premium and are subject to trend.

The provisions for commission and brokerage expenses, 15.0% of written premium for Fire and 12.2% of written premium for Extended Coverage, and the provisions for taxes, licenses, and fees, 2.9% of written premium for Fire and 1.9% of written premium for Extended Coverage, are based on the data shown on pages D-25 and D-27 for the years 2005-2007.

Since general expenses and other acquisition expenses are relative to earned premiums and loss adjustment expenses are relative to losses, separate trend factors are required for premiums, losses, and expenses.

<u>General Expense and Other Acquisition Expense</u> - Based on the 2005-2007 experience on pages D-25 and D-27, general expenses average 7.0% of earned premium for Fire and 5.9% of earned premium for Extended Coverage, and other acquisition expenses average 6.5% of earned premium for Fire and 5.6% of earned premium for Extended Coverage. Since these expenses are incurred throughout the twelve-month effective period, both the numerator and denominator of these factors are trended to 12/1/2011 (six months beyond the 6/1/2011 average effective date).

The average date of payment of the 2005-2007 expenses used to calculate the provisions is 7/1/2006. Similarly, the average date of earning of the 2005-2007 premiums is 7/1/2006. Assuming policies are written with an effective period of one year, the average date of writing is therefore six months earlier, or 1/1/2006. The average date of writing of policies under the proposed rates, and the average date of payment of the expenses on these policies, is six months after the assumed effective date of 6/1/2011, or 12/1/2011. Therefore, the expenses in the numerator are projected 65 months (from 7/1/2006 to 12/1/2011) and the premiums in the denominator are projected 71 months (from 1/1/2006 to 12/1/2011).

The trend factor for expenses in the numerator is based on the rates of change inherent in the Consumer Price Index and the Compensation Cost Index, displayed on pages D-23-24. Based on an equal weighting of the rates of change in these two indices, an average annual change of 2.5% was selected. This average annual change is projected 65 months (from 7/1/2006 to 12/1/2011).

To trend the premiums in the denominator, two multiplicative factors are applied: the 2006 Current Amount Factor and the Premium Projection Factor. Those factors are shown on pages D-18-19 and D-21-22.

<u>Loss Adjustment Expense</u>
Fire: Based on the 2003-2007 experience shown on page D-26, loss adjustment expense (both allocated and unallocated) average 8.2% of incurred losses. The average date of loss in these data is 7/1/2005. Both the numerator and denominator are trended 83 months, from 7/1/2005 to 6/1/2012 (12 months beyond the average effective date of 6/1/2011).

Extended Coverage: Based on the 2003-2007 experience shown on page D-28, loss adjustment expenses (both allocated and unallocated) average 12.4% of incurred losses. The average date of loss in these data is 7/1/2005. Both the numerator and denominator are trended 83 months, from 7/1/2005 to 6/1/2012 (12 months beyond the average effective date of 6/1/2011).

The trend factor used for expenses in the numerator is determined in a similar way as for general and other acquisition expenses. The 2.5% selected average annual change is projected 83 months for Fire and Extended Coverage (from 7/1/2005 to 6/1/2012).

To trend the losses in the denominator, quantities that are calculated in the loss trend procedure are used. Two factors are applied. The first is the 2005 Current Cost Factor shown on page D-14. The second is the adjusted annual rate of change based on the CCI (page D-15). The adjusted annual rate of change is applied over the 30.5 month period from 11/15/2009 to 6/1/2012.

No alternate expense trend methodology has been considered within the last three years.

8. PERCENT RATE CHANGE

The overall statewide rate changes by coverage are shown on page A-1. The statewide rate changes are applied uniformly by coverage amount, protection class, construction and deductible.

The proposed rate changes are dependent on the actual implementation date of the new rates, because any such change will affect all of the trending periods used in the filing. Any change in the trending periods will affect all of the losses, fixed expenses, and premiums used in the calculation of the rate level indication.

If the effective date were to be changed, advance notice of at least one hundred twenty (120) days is required for an orderly implementation of the changes in rates and territory definitions. This is the amount of time required to calculate the new rates based on the new effective date, distribute the necessary information to member companies and allow sufficient time for member companies to implement revised rates and territory definitions.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
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9. FINAL PROPOSED RATES

The proposed rates are shown in Section B.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
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AS PER 11 NCAC 10.1105

10. INVESTMENT EARNINGS, CONSISTING OF INVESTMENT INCOME AND REALIZED PLUS UNREALIZED CAPITAL GAINS, FROM LOSS, LOSS EXPENSE AND UNEARNED PREMIUM RESERVES

(a) See attached Exhibit (10)(a) and the prefiled testimony of R. Curry and D. Appel.

(b) Not applicable to Dwelling Fire and Extended Coverage insurance.

(c) Not applicable to Dwelling Fire and Extended Coverage insurance.

NORTH CAROLINA
DWELLING FIRE INSURANCE

Exhibit (10)(a)

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/07		88,226,023
2.	Mean Unearned Premium Reserve (1) x	0.4711	41,563,279
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		16.43%
	Taxes, Licenses and Fees		2.66%
	1/2 General Expenses		4.01%
	1/2 Other Acquisition		3.52%
	Total		26.62%
4.	(2) x (3)		11,064,145
5.	Net Subject to Investment (2) - (4)		30,499,134

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		88,226,023
2.	Average Agents' Balances		0.147
3.	Delayed Remission (1) x (2)		12,969,225

C. Loss Reserve

1.	Direct Earned Premium (A-1)		88,226,023
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.6570	57,964,497
3.	Expected Mean Loss Reserves (2) x	0.445	25,794,201

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		43,324,110
E.	Average Rate of Return		3.02%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		1,308,388
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		1.48%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.780	1.16%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/07		66,703,155
2.	Mean Unearned Premium Reserve (1) x	0.4373	29,169,290
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		11.54%
	Taxes, Licenses and Fees		1.84%
	1/2 General Expenses		3.18%
	1/2 Other Acquisition		3.12%
	Total		19.68%
4.	(2) x (3)		5,740,516
5.	Net Subject to Investment (2) - (4)		23,428,774

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		66,703,155
2.	Average Agents' Balances		0.125
3.	Delayed Remission (1) x (2)		8,337,894

C. Loss Reserve

1.	Direct Earned Premium (A-1)		66,703,155
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.7374	49,186,906
3.	Expected Mean Loss Reserves (2) x	1.204	59,221,035

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		74,311,915
E.	Average Rate of Return		3.02%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		2,244,220
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		3.36%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.780	2.62%

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Direct earned premiums are the earned premiums for Dwelling insurance in North Carolina from page 15 of the Annual Statement.

Line A-2
The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/07 for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/07	$203,287,567	$171,488,046
2. Unearned Premium Reserve as of 12/31/06	95,484,685	74,473,320
3. Unearned Premium Reserve as of 12/31/07	96,034,574	75,504,872
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	95,759,630	74,989,096
5. Ratio (4) ÷ (1)	0.4711	0.4373

Line A-3
Deduction for prepaid expenses:
Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/07.

Line B-2
Delayed remission of premium:
This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing Dwelling insurance in North Carolina)	0.1422	0.121
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.036	1.036
3. Factor for agents' balances (1) x (2)	0.147	0.125

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/07.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2007 for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2007	99,526,487	30,306,506
2. Loss Reserves as of 12/31/06	45,299,619	37,122,031
3. Loss Reserves as of 12/31/07	37,233,970	30,883,741
4. Mean Loss Reserve 2007: 1/2 [(2) + (3)]	41,266,795	34,002,886
5. Ratio (4) ÷ (1)	0.415	1.122
6. Ratio of LAE Reserves to Loss Reserves (a)	0.246	0.246
7. Ratio of Incurred LAE to Incurred Losses (a)	0.161	0.161
8. Loss and LAE Reserve [(5)x(1.0+(6))/(1.0+(7))]	0.445	1.204

(a) Based on 2007 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing Dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2007	7,507,573,239	248,997,006,108	3.02%

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.02%	0.22

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2007 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	26,829,002	0.350
	Non-Taxable	15,945,544	-
	Sub-Total	42,774,546	0.220
Stocks	Taxable (a)	5,217,764	0.105
	Non-Taxable	1,787,257	-
	Sub-Total	7,005,021	0.078
Mortgage Loans		277,884	
Real Estate		1,765,348	
Contract Loans		458	
Cash/Short Term Investments		5,343,544	
Derivative Instruments		1,588	
All Other		5,816,928	
Sub-Total		13,205,750	0.350
Total		62,985,317	0.231
Investment Deductions		5,452,582	0.350
Net Investment Income Earned		57,532,735	0.220

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA
DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/06		83,498,535
2.	Mean Unearned Premium Reserve (1) x	0.4669	38,985,466
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		15.32%
	Taxes, Licenses and Fees		2.72%
	1/2 General Expenses		3.18%
	1/2 Other Acquisition		3.18%
	Total		24.40%
4.	(2) x (3)		9,512,454
5.	Net Subject to Investment (2) - (4)		29,473,012

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		83,498,535
2.	Average Agents' Balances		0.160
3.	Delayed Remission (1) x (2)		13,359,766

C. Loss Reserve

1.	Direct Earned Premium (A-1)		83,498,535
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.6912	57,714,187
3.	Expected Mean Loss Reserves (2) x	0.542	31,281,089

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		47,394,335
E.	Average Rate of Return		5.28%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		2,502,421
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		3.00%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.781	2.34%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/06		59,191,594
2.	Mean Unearned Premium Reserve (1) x	0.4236	25,073,559
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		12.52%
	Taxes, Licenses and Fees		1.44%
	1/2 General Expenses		3.06%
	1/2 Other Acquisition		3.02%
	Total		20.04%
4.	(2) x (3)		5,024,741
5.	Net Subject to Investment (2) - (4)		20,048,818

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		59,191,594
2.	Average Agents' Balances		0.134
3.	Delayed Remission (1) x (2)		7,931,674

C. Loss Reserve

1.	Direct Earned Premium (A-1)		59,191,594
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.7366	43,600,528
3.	Expected Mean Loss Reserves (2) x	0.693	30,215,166

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		42,332,310
E.	Average Rate of Return		5.28%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		2,235,146
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		3.78%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.781	2.95%

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Direct earned premiums are the earned premiums for Dwelling insurance in North Carolina from page 15 of the Annual Statement.

Line A-2
The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/06 for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/06	$196,863,690	$170,910,213
2. Unearned Premium Reserve as of 12/31/05	88,334,180	70,328,180
3. Unearned Premium Reserve as of 12/31/06	95,484,685	74,473,320
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	91,909,433	72,400,750
5. Ratio (4) ÷ (1)	0.4669	0.4236

Line A-3
Deduction for prepaid expenses:
Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/06.

Line B-2
Delayed remission of premium:
This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing Dwelling insurance in North Carolina)	0.1548	0.1298
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.032	1.032
3. Factor for agents' balances (1) x (2)	0.160	0.134

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/06.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2006 for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2006	74,371,507	50,433,255
2. Loss Reserves as of 12/31/05	30,521,170	28,656,583
3. Loss Reserves as of 12/31/06	45,299,619	37,122,031
4. Mean Loss Reserve 2006: 1/2 [(2) + (3)]	37,910,395	32,889,307
5. Ratio (4) ÷ (1)	0.510	0.652
6. Ratio of LAE Reserves to Loss Reserves (a)	0.248	0.248
7. Ratio of Incurred LAE to Incurred Losses (a)	0.174	0.174
8. Loss and LAE Reserve [(5)x(1.0+(6))/(1.0+(7))]	0.542	0.693

(a) Based on 2006 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing Dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2006	12,164,778,803	230,567,300,564	5.28%

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	5.28%	0.219

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2006 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	25,429,410	0.350
	Non-Taxable	14,446,481	-
	Sub-Total	39,875,891	0.223
Stocks	Taxable (a)	4,507,468	0.105
	Non-Taxable	2,839,135	-
	Sub-Total	7,346,603	0.064
Mortgage Loans		195,240	
Real Estate		1,657,734	
Contract Loans		1,645	
Cash/Short Term Investments		4,755,081	
Derivative Instruments		(49,822)	
All Other		5,439,596	
Sub-Total		11,999,474	0.350
Total		59,221,968	0.229
Investment Deductions		4,573,873	0.350
Net Investment Income Earned		54,648,095	0.219

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA
DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve			
	1.	Direct Earned Premium for Accident Year Ended 12/31/05		82,019,270
	2.	Mean Unearned Premium Reserve (1) x	0.4585	37,605,835
	3.	Deduction for Prepaid Expenses		
		Commission and Brokerage		15.44%
		Taxes, Licenses and Fees		2.21%
		1/2 General Expenses		3.82%
		1/2 Other Acquisition		3.45%
		Total		24.92%
	4.	(2) x (3)		9,371,374
	5.	Net Subject to Investment (2) - (4)		28,234,461
B.	Delayed Remission of Premium (Agents' Balances)			
	1.	Direct Earned Premium (A-1)		82,019,270
	2.	Average Agents' Balances		0.149
	3.	Delayed Remission (1) x (2)		12,220,871
C.	Loss Reserve			
	1.	Direct Earned Premium (A-1)		82,019,270
	2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.6758	55,428,623
	3.	Expected Mean Loss Reserves (2) x	0.544	30,153,171
D.	Net Subject to Investment (A-5)-(B-3)+(C-3)			46,166,761
E.	Average Rate of Return			4.65%
F.	Investment Earnings on Net Subject to Investment (D) x (E)			2,146,754
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)			2.62%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x		0.781	2.04%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve			
	1.	Direct Earned Premium for Accident Year Ended 12/31/05		61,131,227
	2.	Mean Unearned Premium Reserve (1) x	0.4244	25,944,093
	3.	Deduction for Prepaid Expenses		
		Commission and Brokerage		14.26%
		Taxes, Licenses and Fees		1.66%
		1/2 General Expenses		2.97%
		1/2 Other Acquisition		2.75%
		Total		21.64%
	4.	(2) x (3)		5,614,302
	5.	Net Subject to Investment (2) - (4)		20,329,791
B.	Delayed Remission of Premium (Agents' Balances)			
	1.	Direct Earned Premium (A-1)		61,131,227
	2.	Average Agents' Balances		0.133
	3.	Delayed Remission (1) x (2)		8,130,453
C.	Loss Reserve			
	1.	Direct Earned Premium (A-1)		61,131,227
	2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.7241	44,265,121
	3.	Expected Mean Loss Reserves (2) x	0.762	33,730,022
D.	Net Subject to Investment (A-5)-(B-3)+(C-3)			45,929,360
E.	Average Rate of Return			4.65%
F.	Investment Earnings on Net Subject to Investment (D) x (E)			2,135,715
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)			3.49%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x		0.781	2.73%

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for Dwelling insurance in North Carolina from page 15 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/05 for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/05	$191,328,840	$161,570,164
2. Unearned Premium Reserve as of 12/31/04	87,132,550	66,814,816
3. Unearned Premium Reserve as of 12/31/05	88,334,180	70,328,180
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	87,733,365	68,571,498
5. Ratio (4) ÷ (1)	0.4585	0.4244

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/05.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing Dwelling insurance in North Carolina)	0.1447	0.1288
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.029	1.029
3. Factor for agents' balances (1) x (2)	0.149	0.133

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/05.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2005 for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2005	57,292,735	40,020,088
2. Loss Reserves as of 12/31/04	28,560,379	29,107,220
3. Loss Reserves as of 12/31/05	30,521,170	28,656,583
4. Mean Loss Reserve 2005: 1/2 [(2) + (3)]	29,540,775	28,881,902
5. Ratio (4) ÷ (1)	0.516	0.722
6. Ratio of LAE Reserves to Loss Reserves (a)	0.212	0.212
7. Ratio of Incurred LAE to Incurred Losses (a)	0.149	0.149
8. Loss and LAE Reserve [(5)x(1.0+(6))/(1.0+(7))]	0.544	0.762

(a) Based on 2005 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing Dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2005	9,901,141,267	212,942,807,188	4.65%

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	4.65%	0.219

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2005 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	23,254,464	0.350
	Non-Taxable	13,189,050	-
	Sub-Total	36,443,514	0.223
Stocks	Taxable (a)	3,675,690	0.105
	Non-Taxable	3,597,641	-
	Sub-Total	7,273,331	0.053
Mortgage Loans		194,195	
Real Estate		1,650,988	
Collateral Loans		2,367	
Cash on Deposit		3,006,076	
Short Term Investments		(2,499)	
All Other		7,533,180	
Sub-Total		12,384,307	0.350
Total		56,101,152	0.229
Investment Deductions		4,363,521	0.350
Net Investment Income Earned		51,737,631	0.219

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA
DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/04		73,657,178
2.	Mean Unearned Premium Reserve (1) x	0.4717	34,744,091
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		15.04%
	Taxes, Licenses and Fees		2.74%
	1/2 General Expenses		4.18%
	1/2 Other Acquisition		3.40%
	Total		25.36%
4.	(2) x (3)		8,811,101
5.	Net Subject to Investment (2) - (4)		25,932,990

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		73,657,178
2.	Average Agents' Balances		0.157
3.	Delayed Remission (1) x (2)		11,564,177

C. Loss Reserve

1.	Direct Earned Premium (A-1)		73,657,178
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.6678	49,188,263
3.	Expected Mean Loss Reserves (2) x	0.660	32,464,254

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		46,833,067
E.	Average Rate of Return		4.41%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		2,065,338
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		2.80%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.784	2.20%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/04		52,564,869
2.	Mean Unearned Premium Reserve (1) x	0.4181	21,977,372
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		15.53%
	Taxes, Licenses and Fees		1.88%
	1/2 General Expenses		2.87%
	1/2 Other Acquisition		2.88%
	Total		23.16%
4.	(2) x (3)		5,089,959
5.	Net Subject to Investment (2) - (4)		16,887,413

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)		52,564,869
2.	Average Agents' Balances		0.158
3.	Delayed Remission (1) x (2)		8,305,249

C. Loss Reserve

1.	Direct Earned Premium (A-1)		52,564,869
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.7082	37,226,440
3.	Expected Mean Loss Reserves (2) x	0.709	26,393,546

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		34,975,710
E.	Average Rate of Return		4.41%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		1,542,429
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		2.93%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.784	2.30%

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Direct earned premiums are the earned premiums for Dwelling insurance in North Carolina from page 15 of the Annual Statement.

Line A-2
The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/04 for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/04	$180,374,590	$155,550,323
2. Unearned Premium Reserve as of 12/31/03	83,032,929	63,261,713
3. Unearned Premium Reserve as of 12/31/04	87,132,550	66,814,816
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	85,082,740	65,038,265
5. Ratio (4) ÷ (1)	0.4717	0.4181

Line A-3
Deduction for prepaid expenses:
Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/04.

Line B-2
Delayed remission of premium:
This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing Dwelling insurance in North Carolina)	0.1521	0.1537
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.030	1.03
3. Factor for agents' balances (1) x (2)	0.157	0.158

Line C-2
The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/04.

Line C-3
The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2004 for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2004	50,136,613	47,052,222
2. Loss Reserves as of 12/31/03	33,193,930	33,107,270
3. Loss Reserves as of 12/31/04	28,560,379	29,107,220
4. Mean Loss Reserve 2004: 1/2 [(2) + (3)]	30,877,155	31,107,245
5. Ratio (4) ÷ (1)	0.616	0.661
6. Ratio of LAE Reserves to Loss Reserves (a)	0.232	0.232
7. Ratio of Incurred LAE to Incurred Losses (a)	0.149	0.149
8. Loss and LAE Reserve [(5)x(1.0+(6))/(1.0+(7))]	0.660	0.709

(a) Based on 2004 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing Dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2004	8,914,483,759	202,309,630,157	4.41%

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	4.41%	0.216

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2004 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	21,696,435	0.350
	Non-Taxable	11,340,140	-
	Sub-Total	33,036,575	0.230
Stocks	Taxable (a)	3,285,602	0.105
	Non-Taxable	2,131,399	-
	Sub-Total	5,417,001	0.064
Mortgage Loans		169,603	
Real Estate		1,646,000	
Collateral Loans		981	
Cash on Deposit		1,189,806	
Short Term Investments		(15,621)	
All Other		3,767,317	
Sub-Total		6,758,086	0.350
Total		45,211,662	0.228
Investment Deductions		4,064,665	0.350
Net Investment Income Earned		41,146,997	0.216

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA
DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve			
	1.	Direct Earned Premium for Accident Year Ended 12/31/03		73,890,286
	2.	Mean Unearned Premium Reserve (1) x	0.4546	33,590,524
	3.	Deduction for Prepaid Expenses		
		Commission and Brokerage		15.71%
		Taxes, Licenses and Fees		2.75%
		1/2 General Expenses		2.77%
		1/2 Other Acquisition		2.89%
		Total		24.12%
	4.	(2) x (3)		8,102,034
	5.	Net Subject to Investment (2) - (4)		25,488,490
B.	Delayed Remission of Premium (Agents' Balances)			
	1.	Direct Earned Premium (A-1)		73,890,286
	2.	Average Agents' Balances		0.162
	3.	Delayed Remission (1) x (2)		11,970,226
C.	Loss Reserve			
	1.	Direct Earned Premium (A-1)		73,890,286
	2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.7001	51,730,589
	3.	Expected Mean Loss Reserves (2) x	0.712	36,832,179
D.	Net Subject to Investment (A-5)-(B-3)+(C-3)			50,350,443
E.	Average Rate of Return			4.70%
F.	Investment Earnings on Net Subject to Investment (D) x (E)			2,366,471
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)			3.20%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x		0.787	2.52%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A. Unearned Premium Reserve

1.	Direct Earned Premium for Accident Year Ended 12/31/03		43,194,647
2.	Mean Unearned Premium Reserve (1) x	0.3954	17,079,163
3.	Deduction for Prepaid Expenses		
	Commission and Brokerage		14.69%
	Taxes, Licenses and Fees		1.98%
	1/2 General Expenses		3.51%
	1/2 Other Acquisition		3.51%
	Total		23.69%
4.	(2) x (3)		4,046,054
5.	Net Subject to Investment (2) - (4)		13,033,109

B. Delayed Remission of Premium (Agents' Balances)

1.	Direct Earned Premium (A-1)	43,194,647
2.	Average Agents' Balances	0.105
3.	Delayed Remission (1) x (2)	4,535,438

C. Loss Reserve

1.	Direct Earned Premium (A-1)		43,194,647
2.	Expected Incurred Losses and Loss Adjustment Expense (1) x	0.6899	29,799,987
3.	Expected Mean Loss Reserves (2) x	0.403	12,009,395

D.	Net Subject to Investment (A-5)-(B-3)+(C-3)		20,507,066
E.	Average Rate of Return		4.70%
F.	Investment Earnings on Net Subject to Investment (D) x (E)		963,832
G.	Average Rate of Return as a Percent of Direct Earned Premium (F) / (A-1)		2.23%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes (G) x	0.787	1.76%

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED
PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Direct earned premiums are the earned premiums for Dwelling insurance in North Carolina from page 15 of the Annual Statement.

Line A-2
The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/03 for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/03	$183,544,047	$156,729,285
2. Unearned Premium Reserve as of 12/31/02	83,845,604	60,695,380
3. Unearned Premium Reserve as of 12/31/03	83,032,929	63,261,713
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	83,439,267	61,978,547
5. Ratio (4) ÷ (1)	0.4546	0.3954

Line A-3
Deduction for prepaid expenses:
Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/03.

Line B-2
Delayed remission of premium:
This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing Dwelling insurance in North Carolina)	0.1566	0.1018
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.033	1.033
3. Factor for agents' balances (1) x (2)	0.162	0.105

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/03.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2003 for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2003	47,926,168	79,674,595
2. Loss Reserves as of 12/31/02	30,860,422	27,203,722
3. Loss Reserves as of 12/31/03	33,193,930	33,107,270
4. Mean Loss Reserve 2003: 1/2 [(2) + (3)]	32,027,176	30,155,496
5. Ratio (4) ÷ (1)	0.668	0.378
6. Ratio of LAE Reserves to Loss Reserves (a)	0.242	0.242
7. Ratio of Incurred LAE to Incurred Losses (a)	0.166	0.166
8. Loss and LAE Reserve [(5)x(1.0+(6))/(1.0+(7))]	0.712	0.403

(a) Based on 2003 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing Dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2003	8,902,227,439	189,482,098,329	4.70%

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	4.70%	0.213

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2003 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	21,190,681	0.350
	Non-Taxable	9,918,255	-
	Sub-Total	31,108,936	0.238
Stocks	Taxable (a)	2,864,754	0.105
	Non-Taxable	3,838,458	-
	Sub-Total	6,703,212	0.045
Mortgage Loans		158,612	
Real Estate		1,690,507	
Collateral Loans		438	
Cash on Deposit		1,158,122	
Short Term Investments		164,953	
All Other		3,526,989	
Sub-Total		6,699,621	0.350
Total		44,511,769	0.226
Investment Deductions		4,174,811	0.350
Net Investment Income Earned		40,336,958	0.213

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
AS PER 11 NCAC 10.1105

11. IDENTIFICATION OF APPLICABLE STATISTICAL PLANS AND PROGRAMS AND A CERTIFICATION OF COMPLIANCE WITH THEM

(a) ISO Personal Lines Statistical Plan (Other Than Automobile)
ISO Personal Lines Statistical Agent Plan (Other Than Automobile)
ISO 2007 Call for Dwelling Fire and Extended Coverage Statistics
ISO 2007 Call for Dwelling Fire and Extended Coverage Statistical Agent Plan Statistics
ISS Personal Lines Statistical Plans - All Coverages
ISS 2007 Dwelling Fire and Extended Coverage Call
AAIS Personal Lines Statistical Plan
AAIS 2007 Call for Dwelling Fire and Extended Coverage Statistics
NISS Statistical Plan - All Coverages - Part IV, North Carolina
NISS 2007 Quarterly Call
NISS 2007 Calendar Year Annual Statement
NISS 2007 Financial Reconciliation Call
Annual Statement for Calendar Year 2007
Insurance Expense Exhibit for Calendar Year 2007
NCRB Calls for North Carolina Expense Experience 2003-2007

(b) The North Carolina Rate Bureau certifies that there is no evidence known to it or, insofar as it is aware following reasonable inquiry, to the statistical agencies involved that the data which were collected under the statistical plans identified in response (11)(a) above and used in the filing are not materially true and accurate representations of the experience of the companies whose data underlie such experience. While the Rate Bureau is aware that the collected data sometimes require corrections or adjustments, the Rate Bureau's review of the data, the data collection process, and the ratemaking process indicates that the aggregate data are reasonable and reliable for ratemaking purposes. See also the prefiled testimony of R. Curry and S. Thomas.

(c) The attached Exhibit (11)(c) contains general descriptions of the editing procedures used to ensure data were collected in accordance with the applicable statistical plans.

North Carolina Dwelling Fire and Extended Coverage Insurance Statistical Data

ISO Editing Procedures

1. Upon receipt of the data from each reporting company, checks are made to ensure that each record (i.e., the data reported for each exposure) has valid and readable information. This includes a check that the appropriate alpha-numeric codes have been utilized.

2. The records are then checked to ensure that each of the fields has a valid code in it (e.g., company numbers must be entered as four-digit numerals).

3. Relationship edits which evaluate the interrelationship between codes are then performed. For example, if a record indicates North Carolina, Dwelling Fire and Extended Coverage, Form 3, checks are made to ascertain that applicable interrelationships are maintained.

4. Distributional edits are performed to make sure that the reporting company has not erred in miscoding its data into a single class, territory, or other rating criteria due a systems problem or other error.

5. The resulting combined data from all the company records are reconciled with Statutory Page 14 Annual Statement data for that company.

6. After all of the ISO data are aggregated, a consolidated review of the data is conducted to determine overall reasonableness and accuracy. In this procedure the data are compared with previous statewide and territory figures. Areas of concern are identified and results are verified by checking back to the source data.

North Carolina Dwelling Fire and Extended Coverage Insurance Statistical Data

Independent Statistical Service, Inc. (ISS)
Editing Procedures

The following narrative sets forth a general description of the editing procedures utilized by ISS to review North Carolina statistical data. All North Carolina experience submitted to ISS by affiliated companies undergoes standard procedures to ensure that the data is reported in accordance with the ISS state approved statistical plans.

The ISS review of the data takes place on two levels: analysis of individual company data and analysis of the aggregate data of all ISS reporting companies combined. These two separate functions will be treated in that order.

Analysis of Company Data

Analysis of company data includes: completeness checks, editing for valid statistical coding and checking the distribution of data within the various data elements.

1. Completeness Checks (Balancing and Reconciliation):

   Balancing and reconciliation procedures are used to determine completeness of reporting. Completeness means that ISS has received and processed all of the data due to be filed with ISS. First, totals of each company's processed data are compared to separate statewide transmittal totals supplied by the company. This step ensures that ISS has processed completely the experience included in the company's submission of data and that no errors occur during this processing. As a second check for completeness, the reported statistical data is reconciled to the Exhibit of Premiums and Losses, "Statutory Page 14", from the company's Annual Statement . It is a useful procedure in determining completeness because the annual statement represents an independent source of information.

2. Editing of Codes:

   Format and Readability

   Statistical data reported by affiliated companies must be filed in accordance with ISS approved statistical plans. This includes the requirement that the data must conform to the specific formats and technical specifications in order for ISS to properly read and process these submissions. The initial edit is a test of each company's submission to ensure it has been reported using the proper record format and that it meets certain technical requirements for the line of insurance being reported. Key fields are tested to ensure that only numeric information has been reported in fields defined as numeric, and that the fields have been reported in the proper position in the record.

   Edits

   The data items of information filed with the insurance company's experience are reported by using codes defined under the ISS statistical plans. For example, the various types of Policy Forms written on Dwelling Fire and Extended Coverage policies in North Carolina are defined in the Personal Lines Statistical Plan. Each definition for each data element has a unique code assigned to it which distinguishes it from other definitions. All data items applicable to North Carolina are defined in a similar manner in each of the ISS statistical plans and have codes assigned to properly identify each definition.

   All records reported to ISS are subjected to validation of the reported codes. This validation, called editing, is performed to assure that companies are reporting properly defined ISS Statistical Plan codes for North Carolina experience.

The purpose of the edit is to validate the statistical codes reported in each record. This validation is called a Relation Edit. A relational edit verifies that a reported code is valid in combination with one or more related data items. Relational edit tests are accomplished primarily through the use of specific edit tables applicable to each line of insurance.

In most cases, the experience data in the record is used in conjunction with the related codes and compared to an establishment or discontinued date for the code being validated. This ensures that specific codes are not being utilized beyond the range of time during which they are valid.

An example of a relational edit involves territory coding. Many territory code numbers are available under each statistical plan for various states, with various effective dates. However, only codes defined for North Carolina for the specific line being processed are valid in combination with North Carolina reported experience. Further, if a new code is erected, that code will be considered valid only if the date reported in the statistical record is equal or subsequent to the establishment date of the code.

3. Distributional Analysis:

The validation of the statistical coding is not by itself sufficient to assure the credibility of company data. Having assured the reporting of valid codes, the statistical agent must verify that valid entries are indeed reliable. Therefore, the data is also reviewed for reasonable distributions. The primary focus of this review is to establish that the statistical data reported by the company is a credible reflection of the company's experience.

The distribution of company experience by specific data elements such as state, territory, policy form, and construction, for example, for the current reporting period is compared to company profiles of prior periods. In addition, ratios relevant to the line of insurance such as average premium, average loss, percent of volume, loss ratio and loss frequency are compared to industry averages. This historical comparison can highlight changes in the pattern of reporting.

The distributional analysis serves as an additional verification that systematic errors are not introduced during the production of data files submitted to ISS by our affiliated companies. Disproportionate amounts of premiums and/or losses in a particular class or territory, for example, can be detected using this technique.

Validation of Aggregate Data

After the individual company data has been reviewed, the data for all reporting companies is compiled to produce aggregate reports. The aggregate data represents the combined experience of the reporting companies. This data is also subjected to similar review procedures. To ensure completeness, run to run control techniques are applied. This involved balancing the totals of the aggregate runs to previously verified control totals. In this manner the aggregate data is monitored to ensure the inclusion of the appropriate company data.

The aggregate data is also reviewed for credibility through distributional analysis similar to that performed on the individual company data. Earned exposures (where applicable) and premiums and incurred losses and claims are used to calculate pure premiums, claim frequencies and claim costs for comparison to past averages. The analysis of the aggregate data centers on determining consistency over time by comparing several years of experience, by policy form and territory, for example. Through the application of these techniques, ISS is able to provide reliable insurance statistical data in North Carolina.

North Carolina Dwelling Fire and Extended Coverage Insurance Statistical Data

NISS Editing Procedures

a. Every report received is checked for completeness. Every submission must include (1) an affidavit; (2) a letter of transmittal setting forth company control totals for the data being sent; (3) the data being reported on tape, cartridge, diskette or form to be keyed.

b. Individual company submissions are balanced to the company letter of transmittal to ensure that all data have been received and processed. After all four quarters of data have been received, the company reports are reconciled to the Statutory Page 14 Annual Statement amounts. The NISS Financial Reconciliation identifies any amounts needed to reconcile any differences between the company reported data and Annual Statement amounts.

c. Every company record submitted to NISS is verified through NISS edit software for its coding accuracy and conformance with NISS record layouts and instructions. NISS edits verify the accuracy of each code for each data element. Where possible, each data element is subjected to a relational edit whereby it will be checked for accuracy in conjunction with another field.

d. Individual company submissions are also subjected to a series of reasonability tests to determine that the current submission is consistent with previous company submissions, known changes in this line of business and statewide trends. NISS compares current quarter data to the previous quarter. This comparison is performed and analyzed by grouping data.

e. After all of the NISS data are combined, a review of this consolidated data is also performed. The aggregate data is compared on a year to year basis to again verify its reasonableness, similar to those checks employed on an individual company submission.

North Carolina Dwelling Fire and Extended Coverage Insurance Statistical Data

AAIS Editing Procedures

The American Association of Insurance Services functions as an official statistical agent in the State of North Carolina for a number of lines of insurance, including Dwelling Fire and Extended Coverage. In this capacity, it provides for the administration of statistical programs in accordance with approved statistical plans on behalf of the Commissioner of Insurance. These plans, which were filed according to the requirements of the State of North Carolina, serve to insure a high quality of data reliability.

1. All statistical plans constitute permanent calls for data, which is due at AAIS within 60 days following the close of the period covered by the report.

2. Each data submission is accompanied by a transmittal that summarizes the detail data by state. The transmittal provides control totals to balance to the input and output of each step in our collection procedure. Signature of the company official responsible for data collection is required on the transmittal to certify the accuracy and completeness of the data submission.

3. The AAIS data collection procedure consists of several consecutive steps in order to further verify receipt of accurate and complete data from each company and ultimately aggregate the data into the final experience format.

4. The data collection procedure begins with entering the company number, date, type of media, and transmittal control totals for each line of insurance received into a log file. Company number, record counts, lines of insurance, year, quarter, type and number of media are recorded on a processing log and submitted to the computer room.

5. Operations will load the data into the computer and process all lines through a program which verifies certain key fields. The key fields are company number, line of insurance, transaction code and report period (quarter and year). All invalid key fields must be corrected before proceeding to the next step. Once a valid key field report is generated, Operations will copy all valid key field records to the edit file.

6. Upon receipt of the Moved to Edit report, the statistical department will verify that all records were copied from the stored data file to the edit file. All companies are then released by line and report period for editing.

7. The edit program has several functions and reports. They are:

   a. Data is balanced to transmittal totals.
   b. Each statistical field is edited to the valid codes in the statistical plan for the line being processed. Many fields are also cross edited. An example is deductible type and amount. All invalid codes are identified with an asterisk to the right of the code.
   c. Edit reports consist of a listing of invalid records, error summary report, month report, state report and field error detail report. Dwelling Fire and Extended Coverage has an additional report entitled "Data Consistency Report". This report shows the companies' average premium, pure premium, loss ratio, frequency and severity.

d. In addition to the edit report, we provide the company a distribution report. As you might expect, this report provides a distribution of the reported data for almost every single field of information captured by the statistical plan. This report is not only provided as a courtesy to the company, but it is always reviewed by AAIS staff to identify any reporting irregularities that wouldn't be caught by the edit program.

e. Along with the edit and distribution reports, there are additional review procedures in place to identify procedural reporting errors that may exist (e.g., cancellations and coverage changes). A great deal of time is spent on this item because of it's importance to the validity of the reported data.

f. Our analysis of a company's data are returned to the company with a customized letter indicating the type of action required. Depending on the severity of errors, companies are requested to make corrections or resubmit data.

8. AAIS provides assistance to all of its affiliated companies to ensure a continued high level of data quality. Statistical coding seminars designed to instruct company coders and respond to questions are scheduled annually. In addition to the seminars, AAIS has developed Statistical Training Manuals for some lines and pre-edit programs for company in-house use. Technical Services staff is available to train company personnel in all aspects of data collection, coding, statistical reporting and data processing.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
AS PER 11 NCAC 10.1105

12. INVESTMENT EARNINGS ON CAPITAL AND SURPLUS

Not applicable to Dwelling Fire and Extended Coverage insurance.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
AS PER 11 NCAC 10.1105

13. LEVEL OF CAPITAL AND SURPLUS NEEDED TO SUPPORT PREMIUM WRITINGS WITHOUT ENDANGERING THE SOLVENCY OF MEMBER COMPANIES

(a) The aggregate premium to surplus ratios for the calendar years 1999-2008 for the company groups which have written North Carolina dwelling fire and extended coverage insurance are as follows:

	Dwelling Fire	EC
1999	1.054	1.013
2000	1.047	1.095
2001	1.153	1.198
2002	1.302	1.330
2003	1.271	1.244
2004	1.297	1.288
2005	1.225	1.196
2006	1.001	1.010
2007	1.948	0.967
2008	1.003	1.034

(b) The experience provides the best estimate of the future. See the prefiled testimony of D. Appel.

(c) The actual premium to surplus ratio for the property and casualty industry on a countrywide basis (based upon the latest A. M. Best data available at this time) is as follows:

	(000's omitted)
STATUTORY CAPITAL AND SURPLUS, 2009	$531,608,462
STATUTORY CAPITAL AND SURPLUS, 2008	$477,640,184
AVERAGE STATUTORY CAPITAL AND SURPLUS(2009)	504,624,323
NET PREMIUMS EARNED (2009)	430,626,929
PREMIUM/SURPLUS RATIO	0.853

The actual level of capital and surplus needed to support premium writings without endangering the solvency of a company is dependent upon (among others) the financial structure and investments unique to each company, the relationship of the company with affiliated companies as a group (and the experience of the affiliated companies), the mix of business of each company, and the conditions of the economy as they affect each company's individual circumstances. The Rate Bureau is advised that the National Association of Insurance Commissioners, as one of several criteria, generally considers that a premium to surplus ratio for an individual company of 3 to 1 warrants close regulatory attention and monitoring with respect to the company's solvency position.

(d) The Rate Bureau has not allocated surplus by state and by line in preparing this filing. The Rate Bureau has treated surplus in this manner because each dollar of surplus is available to cover losses in excess of premium for each and every line.

STATISTICAL DATA TO COMPLY WITH NORTH CAROLINA
REQUIREMENTS FOR A DWELLING FIRE AND EXTENDED COVERAGE RATE FILING
AS PER 11 NCAC 10.1105

14. OTHER INFORMATION REQUIRED BY THE COMMISSIONER

See attached Exhibits (14)(a), (b), (c) and (d).

See the pre-filed testimony of D. Appel, J. Vander Weide, R. Curry, and S. Thomas.

Not applicable to Dwelling Fire and Extended Coverage insurance.

The following changes in methodology from those used in the March 31, 2006 filing have been incorporated into this filing:

1. In this filing, Extended Coverage modeled losses were calculated for the latest year only and were used to develop a base class modeled loss cost for hurricane losses. In the prior filing, modeled losses were calculated for all five years and were added to non-modeled losses directly. This change leads to a provision for hurricane losses that is more consistent with the current industry set of Dwelling Extended Coverage policyholders.
2. ISO provides AIR Worldwide with exposure information that is input to the Hurricane Model to generate modeled hurricane losses. In the prior filing, exposures were provided in territory and construction detail, and AIR Worldwide then allocated the territory exposures to ZIP code based on the AIR industry database (which includes both Homeowners and Dwelling policies). In this filing, in addition to the detail provided last time, ZIP code data was also provided to AIR Worldwide. This change leads to modeled hurricane losses that reflect more accurately the actual underlying Dwelling exposure distribution.
3. In this filing, a selection has been made for the projected annual rate of change used in the premium trend. In the prior filing, the historical annual rate of change of policy size relativities was used to project the anticipated rate of change in the future. This change compensates for the distortions introduced into historical trend for reasons such as the addition of new homes in the experience.
4. In the prior filing, the trend applied to losses was based solely on the external cost indices. In this filing, the prospective loss trend (the trend used to project losses from a 11/15/2009 cost level to a 6/1/2012 cost level) was adjusted via a Loss Trend Adjustment factor of 2.0% based on observing that trends in the insurance loss data have been exceeding the external cost indices in more recent years. This change leads to a more accurate estimate of future loss cost levels.
5. In the prior filing, in the Extended Coverage territory rate level change calculation, when calculating the credibility weighted non-model base loss cost, the complement of credibility for each territory was the statewide experience loss cost adjusted by the territory's current rate relativity. In this filing, the complement of credibility was the statewide experience loss cost without adjusting for the territory's current rate relativity. This change (not adjusting for the territory's current rate relativity) produces a more accurate estimate for each territory's non-modeled loss cost because in hurricane prone areas, the current rates are heavily influenced by the hurricane (model) loading in each territory.
6. In this filing, the calculations of both the Fire and Extended Coverage indicated rate level changes include a provision for the compensation for assessment risk, whereas the prior filing did not include this provision. This provision reflects the cost to voluntary market insurers of maintaining sufficient capital to backstop residual market losses to the extent required by law.
7. In this filing, the net cost of reinsurance was treated as a fixed expense, whereas in the prior filing it was treated as a variable expense. This is a more appropriate way to reflect this expense, since the net cost of reinsurance to member companies does not vary with the amount of premium charged to a risk.

8. In this filing, the calculation of the wind exclusion credit now fully reflects the net cost of reinsurance. This is a more appropriate way to calculate the credit as it is the wind exposure in the territory that determines the net cost of reinsurance. Therefore the non-wind rate that remains after the wind exclusion credit is applied does not include any loading for reinsurance cost.

See also the pre-filed testimony of R. Curry, S. Thomas, D. Appel, and D. LaLonde.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SECTION F - TERRITORY BOUNDARY REVISION

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SUMMARY OF TERRITORY BOUNDARY CHANGES

This filing revises the Dwelling Fire and Extended Coverage territory definitions to be in line with the Homeowners ones that became effect on May 1, 2009.

The changes are as follows:

1) Territory 05, excluding the portion of Carteret County currently in Territory 05, will become Territory 07.

2) Territory 06, plus the portion of Carteret County currently in Territory 05, will become Territory 08.

3) Territory 42, plus the portion of Carteret County currently in Territory 43, will become Territory 52.

4) Territory 43, excluding the portion of Carteret County currently in Territory 43, will be split into two territories as follows:

a) Territory 48 will contain portions of the following counties currently in Territory 43:

- Currituck
- Dare
- Hyde
- Pamlico

b) Territory 49 will contain the following counties:

- Beaufort
- Camden
- Chowan
- Craven
- Jones
- Pasquotank
- Perquimans
- Tyrrell
- Washington

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SUPPORT FOR TERRITORY BOUNDARY CHANGES

This filing revises the Dwelling Fire and Extended Coverage territory definitions to be in line with the Homeowners ones that became effect on May 1, 2009. Since hurricanes are a key cost driver of both Homeowners and Dwelling, it is appropriate for both lines of business to have identical territories.

To further support this change to the Dwelling territory boundaries, output of the AIR Worldwide Hurricane Model was examined at the county/territory level of detail. The model provided both hurricane losses as well as total insured value. For each county/territory, the mean damage ratio (MDR) was calculated by dividing the modeled hurricane losses by the total insured value (in thousands). The MDR for each county in the current Territories 42 and 43 are shown on Page F-3.

Overall, the current Territory 42 has a higher MDR than the current Territory 43. Since Carteret County has the highest MDR of all the counties in Territories 42 and 43, its exposure to loss is more like that of current Territory 42, and it is appropriate to move it to the current Territory 42 (revised Territory 52). While there are other counties in the current Territory 43 (e.g. Dare County) with relatively high MDRs as well, they are not being moved so as to preserve the contiguous nature of the territory structure.

With the move of the inland portion of Carteret County from current Territory 43 to revised Territory 52, it is also appropriate to move its Beach portion from current Territory 05 to revised Territory 08.

The county MDRs on page F-3 also illustrate that the current Territory 43 has a decreasing hurricane loss potential when comparing the counties in the western half of the territory to those in the eastern half. Therefore, it is appropriate to divide the current Territory 43 into an eastern (Territory 48) piece and a western (Territory 49) piece.

Additionally, the indicated rates on page C-5 clearly show that Territory 52 has higher loss potential than Territories 48/49 and that Territory 48 has higher loss potential than Territory 49.

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

SUPPORT FOR TERRITORY BOUNDARY CHANGES

County	MDR	Current Territory	Revised Territory
Carteret	5.06	43	52
New Hanover	3.53	42	52
Dare	3.21	43	48
Pender	2.90	42	52
Pamlico	2.89	43	48
Brunswick	2.76	42	52
Hyde	2.60	43	48
Onslow	2.26	42	52
Craven	1.57	43	49
Currituck	1.51	43	48
Jones	1.28	43	49
Beaufort	1.17	43	49
Tyrrell	1.13	43	49
Perquimans	0.96	43	49
Chowan	0.95	43	49
Washington	0.95	43	49
Pasquotank	0.82	43	49
Camden	0.79	43	49

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PART I
COVERAGE AND DEFINITION TYPE RULES

RULE 100.
INTRODUCTION

A. About The Dwelling Manual

The Dwelling Policy Program provides property and related coverages using the forms and endorsements referred to in this Manual. The rates, rules, forms and endorsements of the company shall apply in all cases not provided for in this Manual. This program does not apply to Farm Property. Refer to the company for its method of insuring farm property.

B. Manual Structure

1. Contents

The Dwelling Policy Program Manual contains the rules, classifications and rating provisions for the issuance of the Dwelling Policy. The Manual is divided into two sections, multistate general rules and state rules and rates.

The multistate general rules section contains rules common to most states. Any departures, additions, etc. to these rules, unique to individual jurisdictions, are contained in the state rules and rates section.

The general rules do **not** contain premiums, rates, charges or credits expressed in dollars and cents. They do, however, contain rating factors that are applied to state premiums.

2. General Rules

These rules are grouped into the following categories:

a. Part **I** – Coverage And Definition Type Rules,

b. Part **II** – Servicing Type Rules,

c. Part **III** – Base Premium Computation Rules,

d. Part **IV** – Adjusted Base Premium Computation Rules, and

e. Part **V** – Additional Coverages And Increased Limits Rules.

3. State Rules And Rates/ISO Loss Costs

These rules are grouped into the following categories:

a. Exceptions and Additional Rules,

b. Special State Requirements,

c. Territory Definitions,

d. Key Premium/Key Factor Tables, and

e. Premiums, Rates, Charges and Credits.

C. Company Rates/ISO Loss Costs

1. Definition

This Manual contains either ISO loss costs or individual company rates. A loss cost is that portion of the premium which covers only losses and the costs associated with settling losses.

2. Company Rates

All rules in this Manual are designed to be utilized with rates. All references in the rules and examples to rates and/or premiums (including base premiums) shall be interpreted to mean those established by the individual insurance company.

3. Loss Cost Conversion

Each insurance company must provide manualholders with either its own rates or with procedures to convert ISO loss costs to rates and/or premiums. If an insurer provides its own rates, use them in place of the ISO loss costs in this Manual. If an insurer does not provide its own rates, manualholders must convert ISO loss costs in this Manual to rates and/or premiums before applying any of the rules. Refer to the company for special instructions – including rounding procedures – on how to do this.

RULE 101.
FORMS, COVERAGES, MINIMUM LIMITS OF LIABILITY

A. Forms

The Dwelling Policy Program makes available the following policy forms:

1. Dwelling Property 1 Basic Form **DP 00 01,**

2. Dwelling Property 2 Broad Form **DP 00 02,** and

3. Dwelling Property 3 Special Form **DP 00 03.**

B. Coverages

1. Forms **DP 00 02** and **DP 00 03** provide the following coverages. These coverages are written as separate items in the policy or in separate policies:

a. Coverage **A** – Dwelling

b. Coverage **B** – Other Structures

c. Coverage **C** – Personal Property

d. Coverage **D** – Fair Rental Value

e. Coverage **E** – Additional Living Expense

2. Form **DP 00 01** provides Coverages **A** through **D;** Coverage **E** is available by endorsement.

RULE 101.
FORMS, COVERAGES, MINIMUM LIMITS OF LIABILITY (Cont'd)

C. Minimum Limits Of Liability

The following coverages are subject to a minimum limit of liability:

Coverages	Minimum Limit
Coverage **A** – Dwelling	$12,000 (Form **DP 00 02**) $15,000 (Form **DP 00 03**)
Coverage **C** – Personal Property	$4,000 without Coverage **A** (Forms **DP 00 02** and **DP 00 03**)
There are **no** minimum limits for Form **DP 00 01**	

Table 101.C. Minimum Limits Of Liability

RULE 102.
PERILS INSURED AGAINST

The following is a general description of the coverages provided by the individual Dwelling Policy Forms. The policy should be consulted for exact contract conditions.

Perils Insured Against

Perils	DP 00 01 Basic Form	DP 00 02 Broad Form	DP 00 03 Special Form
Fire or Lightning, Internal Explosion	Yes	Yes	Yes
Extended Coverage meaning Windstorm or Hail, Explosion, Riot or Civil Commotion, Aircraft, Vehicles, Smoke, Volcanic Eruption	Optional*	Yes	Yes
Vandalism or Malicious Mischief	Optional**	Yes	Yes
Damage by Burglars, Falling objects, Weight of ice, snow or sleet, Accidental discharge of water or steam, Sudden cracking of a steam or hot water heating system, Freezing, Sudden damage from artificial electric currents	No	Yes	Yes
Additional risks with certain exceptions (Special Coverage)	No	No	Yes Coverages **A** and **B**
* May only be written with the perils of Fire or Lightning, Internal Explosion ** May only be written with Extended Coverage			

Table 102. Perils Insured Against

RULE 103. ELIGIBILITY

A Dwelling Policy may be issued to provide insurance under:

A. Coverage **A** – on a dwelling building:

1. Used solely for residential purposes except that certain incidental occupancies or up to 5 roomers or boarders are permitted;
2. Containing not more than four apartments; and
3. Which may be in a townhouse or rowhouse structure; or
4. In course of construction.

B. Coverage **A** – on a mobile or trailer home:

1. Using Form **DP 00 01** only;
2. Used solely for residential purposes except that certain incidental occupancies or up to 5 roomers or boarders are permitted;
3. Containing not more than one apartment;
4. For a policy period of not longer than one year; and
5. At the permanent location described in the policy.

C. Coverage **B:**

1. At the same location as the dwelling eligible for insurance under Coverage **A;**
2. Not used for business purposes except a permitted incidental occupancy or when rented for use as a private garage;
3. At a separate location when used in connection with the insured location but not for business purposes.

D. Coverage **C** in:

1. A dwelling, mobile or trailer home eligible under Coverage **A;** or
2. A dwelling with rental apartments including furnishings, equipment and appliances in halls or utility rooms; or
3. Any apartment, cooperative or condominium unit used as private living quarters of the insured or rented to others.

E. Coverage **D** for the loss of the fair rental value of:

1. A building eligible for insurance under Coverage **A** or **B;** or
2. Private living quarters eligible under Coverage **C.**

F. Coverage **E** for the additional living expenses incurred to maintain the insured's household.

RULE 104. PROTECTION CLASSIFICATION INFORMATION

The Protection Class listings in the Community Mitigation Classification Manual apply to risks insured under Dwelling Program Policies.

A. The protection class indicated applies in a municipality or classified area where a single class of fire protection is available throughout (8, 7, 6, etc.).

B. In a classified area where two or more classifications are shown (for example: 6/9), the classification is determined as follows:

Distance To Fire Station	Class
1. 5 road miles or less with hydrant within 1,000 feet	*
2. 5 road miles or less with hydrant beyond 1,000 feet	9
3. Over 5 road miles	10
* First protection class (for example 6/9) . . . use Class 6	

Table 104.B. Two Or More Classifications

C. All other properties are Class 10.

RULE 105. SEASONAL DWELLING DEFINITION

A seasonal dwelling is a dwelling with continuous unoccupancy of three or more consecutive months during any one year period.

RULE 106.
CONSTRUCTION DEFINITIONS

A. Frame

Exterior wall of wood or other combustible construction, including wood iron-clad, stucco on wood or plaster on combustible supports or aluminum or plastic siding over frame.

B. Masonry Veneer

Exterior walls of combustible construction veneered with brick or stone.

C. Masonry

Exterior walls constructed of masonry materials such as adobe, brick, concrete, gypsum block, hollow concrete block, stone, tile or similar materials and floors and roof of combustible construction. (Disregarding floors resting directly on the ground).

D. Superior Construction

1. Non-Combustible

Exterior walls and floors and roof constructed of, and supported by metal, asbestos, gypsum, or other noncombustible materials.

2. Masonry Non-Combustible

Exterior walls constructed of masonry materials (as described in Paragraph **C.**) and floors and roof of metal or other non-combustible materials.

3. Fire Resistive

Exterior walls and floors and roof constructed of masonry or other fire resistive materials.

E. Mixed (Masonry/Frame)

A combination of both frame and masonry construction shall be classed and coded as frame when the exterior walls of frame construction (including gables) exceed 33 1/3% of the total exterior wall area; otherwise class as masonry.

RULE 107.
SINGLE AND SEPARATE BUILDINGS DEFINITION

A. Single Building

All buildings or sections of buildings which are accessible through unprotected openings shall be considered as a single building.

B. Separate Building

1. Buildings which are separated by space shall be considered separate buildings.

2. Buildings or sections of buildings which are separated by:

a. A 6 inch reinforced concrete or an 8 inch masonry party wall; or

b. A documented minimum two hour non-combustible wall which has been laboratory tested for independent structural integrity under fire conditions;

which pierces or rises to the underside of the roof and which pierces or extends to the inner-side of the exterior wall shall be considered separate buildings. Accessibility between buildings with independent walls or through masonry party walls described above shall be protected by at least a Class A Fire Door installed in a masonry wall section.

RULE 108. – 200.
RESERVED FOR FUTURE USE

PART II
SERVICING TYPE RULES

RULE 201.
POLICY PERIOD

The policy may be written for a period of:

A. One year and may be extended for successive policy periods by extension certificate based upon the forms, premiums and endorsements then in effect for the company.

B. Three years prepaid at three times the annual premium.

C. Three years in annual installments. Each annual installment shall be the annual premium then in effect for the company. Use Deferred Premium Payment Endorsement **DP 04 32.**

For maintaining common anniversary dates, a policy may be written for a period less than one year or less than three years on a pro rata basis.

RULE 202.
CHANGES OR CANCELLATIONS

If insurance is increased, cancelled or reduced, the additional or return premium shall be computed on a pro rata basis, subject to the minimum premium.

RULE 203.
MANUAL PREMIUM REVISION

A manual premium revision shall be made in accordance with the following procedures:

A. The effective date of such revision shall be as announced.

B. The revision shall apply to any policy or endorsement in the manner outlined in the announcement of the revision.

C. Unless otherwise provided at the time of the announcement of the premium revision, the revision shall not affect:

   1. In-force policy forms, endorsements or premiums, until the policy is renewed; or

   2. In the case of a Deferred Premium Payment Plan, in-force policy premiums, until the anniversary following the effective date of the revision.

RULE 204.
MULTIPLE LOCATIONS

A policy may be issued to provide insurance at more than one described location in the same state provided:

A. The same form and deductible applies at each location;

B. A separate policy declarations page is completed for each location; or

C. The policy declarations page is completed by:

   1. Showing the total policy premium for all locations in the premium payments section.

   2. Showing the deductible by entry of the deductible amount and adding "at each location".

   3. Inserting the form number that applies.

   4. Adding an appropriate reference to the Additional Dwelling Declarations or company equivalent.

RULE 205.
MULTIPLE POLICIES

A. Application

Insurance may be provided on the same property under two or more Dwelling policies in one or more companies as follows:

   1. The same form and endorsements must apply to all policies.

   2. The same deductible amount must apply to all policies.

B. Endorsement

Use Premium Sharing – Two Or More Policies Endorsement **DP 04 30.**

C. Premium

The premium for each policy is developed as follows:

   1. Compute the premium for the total limits of liability from the manual of the company issuing each policy.

   2. Allocate the premium determined in Paragraph **1.** based on the ratio of each policy's limit of liability to the total limits of liability for all policies.

RULE 205.
MULTIPLE POLICIES (Cont'd)

D. Example

The following example is a premium computation between two companies using a $50,000 Coverage **A** Limit. The premiums shown are only for illustration.

Each Company's	**Company A**	**Company B**
Percentage share	70%	30%
Premium for $50,000 Cov. **A**	$240	$200
Each Company's Policy Premium	$168 (70% of $240)	$60 (30% of $200)
Total Premium	(168 + 60) = $228	

Table 205.D. Example

RULE 206.
MINIMUM PREMIUM

A. For prepaid policies a minimum **annual** premium shall be charged for each policy.

B. When policies are written under a premium payment plan, no payment shall be less than the minimum premium for each annual period.

C. The minimum premium may include all chargeable endorsements or coverages for Fire or Fire and Allied Lines if written at inception of the policy.

D. The minimum annual premium shall **not** include charges for Theft or Earthquake Coverage, except when Earthquake is the only peril covered under the policy.

E. Refer to company for minimum premium.

RULE 207.
TRANSFER OR ASSIGNMENT

Subject to the consent of the company, all rules of this Manual and any necessary adjustments of premium, a policy may be endorsed to effect:

A. Transfer to another location within the same state; or

B. Assignment from one insured to another in the event of transfer of title of the dwelling.

RULE 208.
WAIVER OF PREMIUM

A. When a policy is endorsed after the inception date, an amount of additional or return premium may be waived.

B. Refer to company for amount that may be waived.

RULE 209.
WHOLE DOLLAR PREMIUM RULE

Each premium shown on the policy and endorsements shall be rounded to the nearest whole dollar. A premium of fifty cents ($.50) or more shall be rounded to the next higher whole dollar.

In the event of cancellation by the company, the return premium may be carried to the next higher whole dollar.

RULE 210.
REFER TO COMPANY

Whenever a risk is rated on a refer to company basis each company is responsible for complying with regulatory or statutory rate filing requirements.

RULE 211. – 300.
RESERVED FOR FUTURE USE

PART III
BASE PREMIUM COMPUTATION RULES

RULE 301. BASE PREMIUM COMPUTATION

To compute the Base Premium, use the Key Premiums and Key Factors that are displayed in Rule **301.** Refer to state company rates/ISO loss costs.

A. Fire (All Forms), Extended Coverage (DP 00 01), Broad Form (DP 00 02), Or Special Form (DP 00 03) For Coverage A – Dwelling/Coverage C – Personal Property

1. From the Key Premium Table in this Manual, select the Key Premium for the classifications or coverages that apply to the risk.

2. From the Key Factor Table in this Manual, determine the Key Factor for the desired limit of liability. If the desired limit of liability is not shown in the table, **interpolate** as illustrated in Paragraph **B.** of this rule.

3. Multiply the Key Premium by the Key Factor and round to the nearest whole dollar to develop the Base Premium ($.50 or more rounded to the next higher whole dollar).

B. Interpolation Example

1. When the desired limit of liability is **less** than the highest limit shown, interpolate the Key Factors using the nearest limit above and below the desired limit, for example:

a. $25,500 desired limit; the nearest limits are $25,000 and $26,000.

b. For $25,000 the Key Factor is 1.082; for $26,000 the Key Factor is 1.098. Figure the difference between the two Key Factors and divide by 10. This provides a factor per $100.

$$\begin{array}{r} 1.098 \\ -\ 1.082 \\ \hline .016 \end{array} \div 10 = .0016$$

c. Multiply the factor per $100 times five, and add 1.082: the Key Factor for $25,000:

$$\begin{array}{r} .0016 \\ \text{x } 5 \\ \hline .0080 \end{array} + 1.082 = 1.090$$

d. The result, 1.090, is the Key Factor for this example.

2. The factors shown in the interpolation example are for illustration only and are not necessarily the factors shown in the Key Factor Table of this Manual.

RULE 302. VANDALISM AND MALICIOUS MISCHIEF – DP 00 01

Develop the Base Premium by multiplying the same limit of liability selected for Extended Coverage by the Vandalism and Malicious Mischief rate. Refer to state company rates/ISO loss costs.

RULE 303. ORDINANCE OR LAW COVERAGE – ALL FORMS

A. Applicability By Form

1. DP 00 01

Coverage is **not** automatically included in this form but may be added by endorsement. See Paragraph **B.** for rating instructions.

2. DP 00 02 And DP 00 03

A limited amount of coverage is automatically included at each Described Location to pay for the increased costs necessary to comply with the enforcement of an ordinance or law. This amount is equal to 10% of the limit of liability that applies to:

a. Coverage **A** or Unit-Owner Building Items if the insured is an owner of a Described Location; or

b. Coverage **B** if the insured is an owner of a Described Location which is not insured for Coverage **A** or Unit-Owner Building Items; or

c. Improvements, Alterations and Additions if the insured is a tenant of a Described Location.

This amount may be increased by endorsement. See Paragraph **B.** for rating instructions.

B. New Or Increased Coverage

1. Ordinance Or Law Coverage

The policy may be endorsed to add (Form **DP 00 01**) or increase (Form **DP 00 02/DP 00 03**) basic Ordinance or Law Coverage to accommodate the increased costs known or estimated by the insured for material and labor to repair or replace the damaged property and to demolish the undamaged portion of damaged property and clear the site of resulting debris according to the ordinance or law.

2. Endorsement

For Form **DP 00 01,** use Ordinance Or Law Coverage Endorsement **DP 04 74.** For Form **DP 00 02** or **DP 00 03,** use Ordinance Or Law – Increased Amount Of Coverage Endorsement **DP 04 71.**

RULE 303.
ORDINANCE OR LAW COVERAGE – ALL FORMS
(Cont'd)

3. Premium Determination

a. Described Location Including Coverage A

(1) Form DP 00 01

(a) Fire And Extended Coverage

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A	
Total Amount	**Factors**
10%	1.10
25%	1.25
50%	1.45
75%	1.70
100%	1.90
For each add'l 25% increment, add:	.20

Table 303.B.3.a.(1)(a) Factors

(b) Vandalism And Malicious Mischief

Multiply the rate per $1,000 used to determine the Vandalism and Malicious Mischief Base Premium, by the dollar amount of coverage added.

(2) DP 00 02 Or DP 00 03 – Fire, Broad Or Special Forms

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A		
Increase In Amount	**Total Amount**	**Factors**
15%	25%	1.15
40%	50%	1.35
65%	75%	1.60
90%	100%	1.80
For each add'l 25% increment, add		.20

Table 303.B.3.a.(2) Factors

b. Described Location Not Including Coverage A, But Including Coverage B – Specific Structures, Unit-Owner Building Items, And/Or Improvements, Alterations And Additions

See Rule **503.** for rating instructions.

RULE 304.
PERMITTED INCIDENTAL OCCUPANCIES

A. Coverage Description

1. One of the incidental occupancies described in Paragraph **B.** is permitted in a premises eligible for coverage under a Dwelling Policy, if:

a. The policy provides insurance under Coverage **A, B** or **C;**

b. The incidental occupancy is operated by the insured who is the owner or a resident of the premises; and

c. There are no more than two persons at work in the incidental occupancy.

2. Use Permitted Incidental Occupancies Endorsement **DP 04 20.**

B. Permitted Incidental Occupancies

1. Offices, Schools or Studios meaning offices for business or professional purposes, and private schools or studios for music, dance, photography and other instructional purposes.

2. Small Service Occupancies meaning occupancies primarily for service rather than sales. For example: barber or beauty shop, tailor or dressmaker, telephone exchanges or shoe repair shops using handwork only.

3. Storage of merchandise if the value of the merchandise does not exceed $10,000.

C. Amount Of Insurance

The amounts of insurance for the contents of the incidental occupancy and merchandise in storage shall be stated as separate contents items in the policy declarations.

D. Premium Computation

Determine the Coverage **C** Base Premium under Rule **301.,** using the single Key Factor for the total amount of insurance for:

1. Household personal property,

2. Contents of the incidental occupancy, and

3. Merchandise in storage.

RULE 305. LOSS SETTLEMENT OPTIONS

A. Functional Replacement Cost Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on a functional replacement cost basis if, at the time of loss, the amount of insurance on the damaged building is 80% or more of the functional replacement cost of the building immediately before the loss. Functional Replacement Cost means the amount which it would cost to repair or replace the damaged building with less costly common construction materials and methods which are functionally equivalent to obsolete, antique or custom construction materials and methods.

3. Premium Computation

Develop the Base Premium in accordance with Rule **301.** for the amount of insurance selected for this option.

4. Endorsement

Use Functional Replacement Cost Loss Settlement Endorsement **DP 05 30.**

B. Actual Cash Value Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on an actual cash value basis if, on the inception date of the policy, the Coverage **A** limit of liability selected by the insured is less than 80% of the full replacement cost of the dwelling.

3. Premium Computation

The premium is computed by multiplying the Base Premium by the appropriate factor from the following table:

Coverage A Limit Of Liability Equals Less Than_____% Of Replacement Value	Factor
80%, but not less than 50%	1.05
Less than 50%	1.10

Table 305.B.3. Factors

4. Endorsement

Use Actual Cash Value Loss Settlement Endorsement **DP 04 76.**

RULE 306. – 400. RESERVED FOR FUTURE USE

PART IV
ADJUSTED BASE PREMIUM COMPUTATION RULES

RULE 401.
SUPERIOR CONSTRUCTION

A. Introduction

Refer to the Construction Definition rule in this Manual for details.

B. Extended Coverage Rating Classification

For Extended Coverage rating purposes a dwelling classified as:

1. Fire Resistive is considered Wind Resistive.
2. Masonry Non-Combustible is considered Semi-Wind Resistive.

C. Premium Computation

Multiply the Masonry Base Premium by the appropriate factor selected from the following table:

Classifications	Fire	E.C., Broad & Special Forms
Fire Resistive & Masonry Non-Combustible	.50	.50
Non-Combustible	.50	1.00

Table 401.C. Superior Construction Factors

RULE 402.
COVERAGE C – PERSONAL PROPERTY IN BUILDINGS SUBJECT TO COMMERCIAL CLASS RATES OR SPECIFIC RATES

A. Fire

If the building is classified in Division Five of the Commercial Lines Manual – Fire And Allied Lines, Rule **85.**, Paragraph **B.1.**, **B.2.**, or **B.3.**, use the appropriate factor selected from the following table:

Types Of Construction	B.1. Or B.2.	B.3. Or Is Rated Specifically
1. Fire Resistive, Masonry Non-Comb. & Non-Comb. Multiply the Masonry Coverage **C** Base Premium by:	.50	1.00
2. All Other Construction Multiply the Masonry Coverage **C** or Frame Base Premium by:	1.00	2.00

Table 402.A. Coverage C – Personal Property In Buildings

B. Extended Coverage, Vandalism And Malicious Mischief, Broad Or Special Form

Multiply the Coverage **C** Base Premium by 1.00.

RULE 403.
DWELLING UNDER CONSTRUCTION

A. Coverage Description

Two methods are provided for insuring this exposure.

1. **Named Insured Is The Intended Occupant**

   A builder (contractor) may be designated as an additional insured. The policy may be cancelled upon completion of the dwelling. Use Dwelling Under Construction Endorsement **DP 11 43.**

2. **Named Insured Is Not The Intended Occupant**

   The policy shall specify building is in course of construction and permission is granted to complete.

   For other coverage bases, refer to the Commercial Lines Manual.

B. Premium Computation

1. Multiply the Coverage **A** Owner Occupied Base Premium by .65.
2. Multiply the Coverage **A** Non-Owner Occupied Base Premium by 1.00.

RULE 404.
MOBILE OR TRAILER HOMES – DP 00 01 ONLY

Refer to the state company rates/ISO loss costs.

RULE 405.
TOWNHOUSE OR ROWHOUSE

A. Individual Family Units

Determine the total number of individual family units within a Fire Division. For example, a two family dwelling attached to a one family dwelling is considered **three** individual family units within a Fire Division if both dwellings are not separated by a fire wall. Four attached two family dwellings are considered **eight** individual family units within a Fire Division if they are not separated by fire walls. A policy may be issued for:

1. Coverage **A** when the dwelling contains one, two, three or four individual family units within a Fire Division.
2. Coverage **C** in a dwelling with one or more individual family units within a Fire Division.

RULE 405.
TOWNHOUSE OR ROWHOUSE (Cont'd)

B. Premium Computation

Number Of Individual Family Units	Use Coverage A∗ Or C Base Premium
1, 2, 3 or 4	1, 2, 3 or 4 families
5 or more	5 or more families
∗ Refer to Commercial Lines Manual for Building Coverage when it contains five or more individual family units within a Fire Division	

Table 405.B. Townhouse Or Rowhouse

RULE 406.
DEDUCTIBLES

All policies are subject to a deductible that applies to loss from all perils except Earthquake. A separate deductible type applies to Earthquake Coverage as described in Rule **509.**

For Theft Coverage, the deductible amount may differ from the deductible amount that applies to Fire and Allied Lines perils.

Refer to the Earthquake and Theft Coverage rules for the applicable deductible provision.

A. Base Deductible

$250 Deductible.

B. Optional Deductibles

1. All Perils Deductibles

Multiply the Base Premium for the Base Deductible by the appropriate factors selected from the following table:

Deductible	Fire	E.C., V.&M.M., Broad & Special Forms
$ 100∗	1.05	1.10
500	.97	.91
1,000	.95	.76
2,500	.88	.50
∗ Refer to company for the minimum annual additional premium charge that applies per policy for all $100 All Perils Deductibles		

Table 406.B.1. All Perils Deductibles

2. Windstorm Or Hail Deductibles

The following deductible options are used in conjunction with a deductible applicable to all other perils covered under Extended Coverage, Broad or Special Forms.

a. Percentage Deductibles

(1) Deductible Amounts

This option provides for higher Windstorm or Hail percentage deductibles of 1%, 2% or 5% of the limit of liability that applies to Coverage **A, B, D** or **E,** whichever is greatest, when the dollar amount of the percentage deductible selected exceeds the amount of the All Other Perils deductible. This option is not available for policies covering only personal property.

(2) Endorsement

Use Windstorm Or Hail Percentage Deductible Endorsement **DP 03 12.**

(3) Declarations Instructions

Enter, on the policy declarations, the percentage amount that applies to Windstorm or Hail and the dollar amount that applies to all other perils. For example:

Deductible – Windstorm or Hail 2% of the Coverage **A** limit and $250 for all other perils.

(4) Deductible Application

In the event of a Windstorm or Hail loss to covered property, the dollar amount is deducted from the total of the loss for all coverages. For example:

			Amount Of Loss	
Cov.	Limit Of Liability	1% Ded.	Before Ded.	After Ded.
A	$ 100,000	$ 1,000	$ 7,500	–
B	–	–	3,000	–
C	35,000	–	–	–
D	18,500	–	660	–
E	–	–	–	–
			$ 11,160	$ 10,160

Table 406.B.2.a.(4) Example

(5) Use Of Factors

The factors displayed in Paragraph **(6)** incorporate the factors for the All Perils Deductibles shown in Paragraph **B.1.** above. Do **not** use the factors for the All Perils Deductibles when rating a policy with a higher Windstorm or Hail deductible.

RULE 406.
DEDUCTIBLES (Cont'd)

(6) Deductible Factors

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the appropriate factor selected from the following table for the deductible amounts desired:

Coverage A, B, D Or E And Coverage Options For Buildings And Non-Building Structures			
All Other Perils	Windstorm Or Hail Deductible Amounts		
Ded. Amt.	1%	2%	5%
$ 100	.99	.92	.82
250	.93	.86	.77
500	.88	.81	.71
1,000	.72	.72	.63
2,500	.49	.49	.48

Table 406.B.2.a.(6)#1 Factors

Coverage C And Other Personal Property Coverage Options*	
All Other Perils Ded. Amt.	Windstorm Or Hail 1%, 2% Or 5% Deductible
$ 100	1.07
250	.99
500	.90
1,000	.72
2,500	.49
* Only use when policy also covers building or non-building structures	

Table 406.B.2.a(6)#2 Factors

b. Higher Fixed-Dollar Deductibles

(1) Deductible Amounts

This option provides for higher fixed dollar deductible amounts of $1,000, $2,000 and $5,000 when the dollar amount of the higher fixed-dollar deductible selected exceeds the amount of the All Other Perils deductible. This option is **not** available for policies covering only personal property.

(2) Declarations Instructions

Separately enter, on the policy declarations, the deductible amounts that apply to Windstorm or Hail and All Other Perils. For example:

Deductible – $250 except $1,000 for Windstorm or Hail.

(3) Coverage Options

The deductible factors for Coverage **A, B, D** or **E** and coverage options for buildings and non-building structures differ by the deductible amounts that apply to Windstorm or Hail and to other perils.

The deductible factors for Coverage **C** and other personal property coverage options differ by the deductible amount that applies to other perils. They do not differ by the amount of the Windstorm or Hail deductible.

(4) Use Of Factors

The factors displayed in Paragraph **(5)** incorporate the factors for the All Perils Deductibles shown in Paragraph **B.1.** Do **not** use the factors for the All Perils Deductibles when rating a policy with a higher Windstorm or Hail deductible.

(5) Deductible Factors

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the appropriate factor selected from the following table for the deductible amounts desired:

Coverage A, B, D Or E And Coverage Options For Buildings And Non-Building Structures			
All Other Perils	Windstorm Or Hail Deductible Amounts		
Ded. Amt.	$1000	$2000	$5000
$ 100	.95	.87	.83
250	.89	.81	.77
500	.84	.76	.72
1,000	–	.68	.64
2,500	–	–	.49

Table 406.B.2.b.(5)#1 Factors

Coverage C And Other Personal Property Coverage Options*	
All Other Perils Ded. Amt.	Windstorm Or Hail Deductible Amounts $1000, $2000 Or $5000
$ 100	.97
250	.90
500	.82
1,000	.68
2,500	.49
* Only use when policy also covers building or non-building structures	

Table 406.B.2.b.(5)#2 Factors

RULE 407.
AUTOMATIC INCREASE IN INSURANCE

A. Coverage Description

The policy may be endorsed to provide automatic annual increases in the Coverage **A** and **B** limits of liability.

B. Premium Computation

1. The premium is computed by the Base Premium by the appropriate factors selected from the following table as follows:

Amount Of Annual Increase	Factor
4%	1.02
6%	1.03
8%	1.04
Each Add'l 4% over 8% add:	.02

Table 407.B.1. Factors

2. The premium for a 3 year policy is 3.2 times the annual policy premium.

C. Endorsement

Use Automatic Increase In Insurance Endorsement **DP 04 11.**

RULE 408.
PROTECTIVE DEVICES

A. Protective Devices Factors

Approved and properly maintained installations of fire alarms and automatic sprinklers in the dwelling may be recognized for a reduced premium – computed by multiplying the Base Premium by the selected factors below:

Protective Devices Factors

Type Of Installation∗	Dwelling Factor	Mobile Or Trailer Home Factor
Central Station Reporting Fire Alarm	.90 to 1.00	.92 to 1.00
Fire Department Reporting Fire Alarm	.93 to 1.00	.95 to 1.00
Local Fire Alarm	.95	.97
Automatic Sprinklers In All Areas Including Attics, Bathrooms, Closets, Attached Structures	.80 to .90	.90 to .95
Automatic Sprinklers In All Areas Except Attic, Bathroom, Closet And Attached Structure Areas That Are Protected By A Fire Detector	.90 to 1.00	.95 to 1.00
∗ Refer to company for eligibility, types of systems and devices, installations, and available credits		

Table 408.A. Protective Devices Factors

B. Endorsement

Use Premises Alarm Or Fire Protection System Endorsement **DP 04 70.**

RULE 409.
ACTUAL CASH VALUE LOSS SETTLEMENT WINDSTORM OR HAIL LOSSES TO ROOF SURFACING – DP 00 02, DP 00 03 AND DP 00 01 WITH DP 00 08

A. Introduction

The policy provides settlement for building losses on a repair or replacement cost basis, subject to certain conditions.

B. Coverage Description

The policy may be endorsed to provide loss settlement exclusively on an Actual Cash Value basis for roof surfacing when damage is caused by the peril of Windstorm or Hail.

C. Premium Determination

To develop a premium for this option, multiply the Base Premium by a factor of .98.

D. Endorsement

Use Actual Cash Value Loss Settlement Windstorm Or Hail Losses To Roof Surfacing Endorsement **DP 04 75.**

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING

A. General Information

1. The Building Code Effectiveness Grading Schedule develops a grade of 1 to 10 for a community based on the adequacy of its building code and the effectiveness of its enforcement of that code. Policies which cover the perils of Windstorm or Hail or Earthquake may be eligible for special rating treatment, subject to the criteria in the following paragraphs. The Building Code Effectiveness Grading factor applies, where applicable, in addition to the Public Protection Classification factors.

2. In some communities, two Building Code Effectiveness Grades may be assigned. One grade will apply to one and two family dwelling buildings and/or personal property contained in such buildings. The other grade will apply to all other buildings occupied for residential, commercial and/or manufacturing purposes including personal and business property contained therein. The Community Mitigation Classification Manual will indicate the application of each grade.

3. The Building Code Effectiveness Grades for a community, and their effective dates, are provided in the Community Mitigation Classification Manual published by Insurance Services Office, Inc.

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING (Cont'd)

B. Community Grading

1. The Building Code Effectiveness Grade applies to any building that has an original certificate of occupancy dated the year of the effective date of the community grading, or later. A rating factor has been developed for each community grade.

2. If a community is regraded subsequent to its initial grading, the factor for the revised grade applies to buildings that have an original certificate of occupancy dated the year of the effective date of the revised grading, or later.

3. Where certificates of occupancy are not issued, equivalent documentation acceptable to the company may be used.

4. If, due to an addition or alteration, the original building is changed to comply with the latest building code, the factor for the community grading applicable at the time the reconstruction is completed will apply to such building.

5. The Building Code Effectiveness Grade may apply to Windstorm/Hail or Earthquake, or to both. Specific information is provided in the Community Mitigation Classification Manual. If the grade in the manual does not apply to one of the perils, the factor should not be applied for that peril.

C. Individual Grading

Where buildings have been built in full conformance with the natural hazard mitigation elements of one of the nationally recognized building codes even though the community grade is greater than one, exception rating procedures may apply.

1. Any building may be classified as Grade 1 for Windstorm/Hail upon certification by a registered or licensed design professional, based on an on-site inspection, that such building is in compliance with one of the three nationally recognized building codes with respect to mitigation of the windstorm or hail hazard. This classification is effective only from the date of the certification.

2. Any building may be classified as Grade 1 for Earthquake upon certification by a registered or licensed design professional, based on an on-site inspection, that such building is in compliance with the earthquake mitigation elements of one of the three nationally recognized building codes. This classification is effective only from the date of the certification.

D. Ungraded Risks

Buildings which do **not** meet the criteria in Paragraph **B.** or **C.** for Grade assignment are rated and coded as ungraded risks. Do **not** classify as Grade 10.

E. Premium Credit Computation

1. Community Grading

a. Windstorm Or Hail

Compute the premium credit as follows:

(1) For buildings which are eligible under Paragraph **B.** of this rule, and for personal property inside such buildings, multiply the Key Premium for Extended Coverage **(DP 00 10)** by the applicable factor in Paragraph **E.1.c.(1);** and

(2) Multiply the result from Paragraph **(1)** by the Key Factor for the desired amount of insurance.

b. Earthquake

When Earthquake Endorsement **DP 04 69** is attached to the policy, multiply the Earthquake Base Premium by the appropriate factor in Paragraph **E.1.c.(2)** located in the state exceptions.

c. Credit Factors

Refer to state exceptions for state specific factors.

2. Individual Grading

For any building classified as Grade 1 based upon certification as set forth in Paragraph **C.,** use the appropriate factor listed under Paragraph **E.1.c.** located in the state exceptions.

RULE 411. – 499.
RESERVED FOR FUTURE USE

PART V
ADDITIONAL COVERAGES AND INCREASED LIMITS RULES

RULE 500.
MISCELLANEOUS LOSS COSTS

This rule is reserved to provide rates for various rating rules in this Manual. Refer to state company rates/ISO loss costs.

RULE 501.
COVERAGE B – OTHER STRUCTURES

A. Coverage Description

Coverage for other structures described as covered under Coverage **B** is automatically provided on a blanket basis for up to 10% of the Coverage **A** limit.

1. Under Form **DP 00 01,** use of this option reduces the Coverage **A** limit for the same loss.

2. Under Form **DP 00 02** or **DP 00 03,** this limit is additional insurance.

The blanket limit may not be increased.

B. Specific Structures Coverage

Coverage may be purchased for specific structures. See Paragraph **C.**

C. Premium Computation

1. Structure Rented To Others For Dwelling Purposes

Rate each structure separately as a Coverage **A** Dwelling, Non-Owner-Occupied under Rule **301.**

2. Structure Not Rented To Others For Dwelling Purposes

Enter the limit of liability and description of each structure in the Coverages Declarations of the policy at inception or by Change Endorsement **DP 12 10** after policy inception.

a. Policy includes Coverage **A** or structure does not have permitted incidental occupancy or is at same described location as the dwelling:

(1) Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

(2) Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

b. Policy does not include Coverage **A** or structure has permitted incidental occupancy or is not at same described location as the dwelling:

(1) Fire, Extended Coverage, Broad And Special Forms

Rate each structure separately as a Coverage **A** item under Rule **301.** using the one Family Key Premium.

(2) Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 502.
COVERAGE D – FAIR RENTAL VALUE
COVERAGE E – ADDITIONAL LIVING EXPENSE

A. Introduction

Coverage is provided in the forms on a limited basis as follows:

1. Form DP 00 01

a. Coverage D

Up to 20% of the Coverage **A** limit is available. Use of this option reduces the Coverage **A** limit for the same loss.

b. Coverage E

Not automatically included in form. It may be added as noted in Paragraph **B.**

2. Form DP 00 02 Or DP 00 03

Coverage **D** and **E** combined – Up to 20% of the Coverage **A** limit is available for Coverage **D** and Coverage **E** combined as additional insurance.

B. Coverage Description

Coverage may be increased or added as follows for all forms:

1. Coverage D

a. The amount recoverable each month under this coverage shall be based on the lost rental income less any expenses that do not continue during untenability.

RULE 502.
COVERAGE D – FAIR RENTAL VALUE
COVERAGE E – ADDITIONAL LIVING EXPENSE (Cont'd)

b. Enter amount of increase in policy declarations at inception or in Change Endorsement **DP 12 10,** after policy inception.

c. For **DP 00 01,** the amount recoverable each month is limited to a fraction of the total rental value amount insured under the policy. This fraction is equal to one divided by the number of months dwelling is rented per year. Enter the fraction in the policy declarations or **DP 12 10.**

DP 00 01 Example

Factors		
$6,000	=	Rental Value Coverage in Form (10% of Coverage **A** limit of $60,000)
+2,000	=	Additional Insurance (Shown under Coverage **D** in policy declarations)
$8,000	=	Total Rental Value Amount Insured
Scenario A		
If dwelling is rented for entire year, then fraction = 1/12. $8,000 X 1/12 = Up to $666.66 available each month.		
Scenario B		
If dwelling is rented 8 months per year, then fraction = 1/8. $8,000 X 1/8 = Up to $1,000 available each month		

Table 502.B.1.c. DP 00 01 Example

2. Coverage E

a. Enter initial limit **(DP 00 01)** or amount of increase **(DP 00 02** or **DP 00 03)** in policy declarations at inception or in Change Endorsement **DP 12 10** after policy inception.

b. Always show "up to 25% per month" in the policy or endorsement declarations.

c. Use Additional Living Expense Endorsement **DP 04 14.**

C. Premium Computation

1. Policy Includes Coverage A Or Coverage C

a. Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

2. Policy Does Not Include Coverage A Or Coverage C

a. Fire, Extended Coverage, Broad And Special Forms

(1) One To Four Family Dwelling

Multiply the Coverage **A** Key Premium by the Coverage **A** Key Factor, for:

(a) The Coverage **D** limit, times .53; or

(b) The Coverage **E** limit, times 1.00

(2) Five Or More Family Dwelling

Calculate the premium as instructed above using the four Family Key Premium.

b. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 503.
ORDINANCE OR LAW COVERAGE FOR COVERAGE B – SPECIFIC STRUCTURES, BUILDING ITEMS AND IMPROVEMENTS, ALTERATIONS AND ADDITIONS

A. Coverage Description

1. DP 00 01

The policy may be endorsed to add an amount of Ordinance or Law Coverage equal to the amounts noted in Paragraphs **1.** and **2.**

2. DP 00 02 Or DP 00 03

The basic 10% of coverage may be initially increased to the amounts noted in Paragraphs **A.2.a.** and **b.**

a. 50% of the total Coverage **B** or Unit-Owner Building Items limit; or

b. 100% of the Improvements, Alterations and Additions limit.

B. Increased Limits

These amounts may be further increased in 25% increments.

C. Premium Determination

1. The premium for this additional coverage is determined based on the dollar amount of coverage added for **DP 00 01,** or the dollar amount of increase, represented by the increased percentage selected above the basic limit for **DP 00 02** or **DP 00 03.**

2. Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

RULE 504. IMPROVEMENTS, ALTERATIONS AND ADDITIONS TENANT AND CO-OP UNIT-OWNER – DP 00 01 OR DP 00 02

A. Introduction

Named perils coverage is automatically provided in the forms for up to 10% of the Coverage **C** limit.

1. DP 00 01

Use of this option reduces the Coverage **C** limit for the same loss.

2. DP 00 02

This limit is additional insurance.

This limit may be increased for an additional premium.

B. Special Coverage

For Form **DP 00 02,** coverage may be extended to Special Coverage for an additional premium.

C. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

D. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

a. If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. If the policy does not include Coverage **A, B, C, D** or **E,** multiply the Coverage **A.,** Four Family, Owner-Occupied Key Premium (for the territory, protection and construction applying to the described location) by the Coverage **A** Key Factor for the amount of insurance desired.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

E. Endorsement

1. Use Improvements, Alterations And Additions Endorsement **DP 04 31.**

2. Use Improvements, Alterations And Additions Endorsement **DP 04 31** and Special Coverage Endorsement **DP 04 65** for Special Coverage.

RULE 505. BUILDING ITEMS CONDO UNIT-OWNER – DP 00 01 OR DP 00 02

A. Unit-Owners Coverage Including Standard Other Insurance And Service Agreement

1. Coverage Description

Building items are not covered in the forms.

Named Perils or Special Coverage is available for an additional premium.

2. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

3. Premium Computation

a. Fire, Extended Coverage, Broad And Special Forms

(1) If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

(2) If the policy does not include Coverage **A, B, C, D** or **E,** multiply the Coverage **A.,** Four Family, Owner-Occupied Key Premium (for the territory, protection and construction applying to the described location) by the Coverage **A** Key Factor for the amount of insurance desired.

b. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

4. Endorsement

a. Use Form **DP 00 01** or **DP 00 02** and Unit-Owners Coverage Endorsement **DP 17 66.**

b. Use Form **DP 00 02** and Unit-Owners Coverage Endorsement **DP 17 66** and Special-Coverage Endorsement **DP 04 65.**

RULE 505.
BUILDING ITEMS CONDO UNIT-OWNER – DP 00 01 OR DP 00 02 (Cont'd)

B. Unit-Owners Coverage Including Modified Other Insurance And Service Agreement Condition

1. Introduction

Unit-Owners Coverage Endorsement **DP 17 66** provides that if there is other insurance in the name of a corporation or association of property owners covering the same property, payment for a covered loss under Unit-Owners Coverage Endorsement **DP 17 66** will be excess over the amount recoverable under such insurance. If the Association does not recover under its policy, for any reason, there is no payment to the insured unit-owner under Unit-Owners Coverage Endorsement **DP 17 66.**

2. Coverage Description

The policy may be endorsed to modify the Other Insurance and Service Agreement Condition to provide for payment of a covered loss in excess of the amount due from the other insurance whether the corporation or association of property owners can collect on it or not.

3. Premium Computation

Multiply the premium(s) developed in accordance with Paragraph **A.3.** by 1.25.

4. Endorsement

Use Unit-Owners Coverage – Modified Other Insurance And Service Agreement Condition Endorsement **DP 17 71** instead of Unit-Owners Coverage Endorsement **DP 17 66** noted in Paragraph **A.4.**

RULE 506.
LOSS ASSESSMENT PROPERTY COVERAGE CO-OP OR CONDO UNIT-OWNER OR TENANT – DP 00 01 OR DP 00 02 DWELLING BUILDING OWNER – ALL FORMS

A. Coverage Description

1. Coverage for property loss assessment, for which the insured may be liable, is not included in the forms.

2. Coverage is available for an additional premium for all insured perils.

3. When coverage is desired for the peril of Earthquake, refer to Rule **509.C.** for policy writing and rating instructions.

B. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

C. Endorsement

Use Loss Assessment Property Coverage Endorsement **DP 04 63.**

D. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

a. If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. If the policy does not include Coverage **A, B, C, D,** or **E,** multiply the Coverage **A.,** Four Family, Owner-Occupied Key Premium (for the territory, protection and construction applying to the described location) by the Coverage **A** Key Factor for the amount of insurance desired.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

The limit of $500 may be increased subject to the rules and rates of the company.

RULE 508.
TREES, SHRUBS AND OTHER PLANTS

A. Form DP 00 01

1. Coverage Description

Coverage for trees, shrubs and other plants is not provided in this form. However, for an additional premium, coverage is available for specified perils on two bases, with and without the peril of windstorm or hail. Coverage is limited to a $500 per item maximum.

Declare on the endorsement or elsewhere in the policy, as directed by the company, whether the peril of windstorm or hail applies.

2. Stand Alone Coverage

This coverage may be written without Coverage **A, B, C, D** or **E.**

3. Endorsement

Use Trees, Shrubs And Other Plants Endorsement **DP 04 17.**

B. Forms DP 00 02 Or DP 00 03

1. Coverage Description

Up to 5% of the Coverage **A** limit is available in the form (subject to a $500 per item maximum) for specified perils as additional insurance.

2. Windstorm Or Hail Coverage

Coverage for Windstorm or Hail is available up to 5% of Coverage **A** limit (subject to a $500 per item maximum) for an additional premium.

3. Endorsement

Use Windstorm Or Hail Endorsement **DP 04 18.**

RULE 508.
TREES, SHRUBS AND OTHER PLANTS (Cont'd)

C. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

Refer to state company rates/ISO loss costs Rule **508.**

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 509.
EARTHQUAKE COVERAGE

A. Coverage Description

The policy may be endorsed to provide coverage against a loss resulting from the peril of Earthquake. This peril shall apply to all Property Coverages for the same limits provided in the policy. When added to the Fire policy, this peril shall apply to the same coverages and for the same limits that apply to the peril of Fire. Use Earthquake Endorsement **DP 04 69.**

B. Earthquake Only Coverage

When a policy is written to cover only the peril of Earthquake:

1. Use Form **DP 00 01** for Actual Cash Value Loss Settlement or **DP 00 02** for Replacement Cost;
2. Refer to company for Endorsements; and
3. Multiply the rates in this rule by a **factor** of 1.10.

C. Loss Assessment Coverage

When the policy is extended to cover loss assessment resulting from loss by this peril, the limit of liability shall be based on the insured's proportionate interest in total value of all collectively owned buildings and structures of the corporation or association of property owners. Refer to company for rates. Use Loss Assessment Coverage For Earthquake Endorsement **DP 04 68.**

D. Deductible

Deductible percentage amounts of 5%, 10%, 15%, 20% and 25% of the limit of liability for Coverage **A** and Coverage **C** are included in this rule.

In the event of an Earthquake loss to covered property, the dollar amount is deducted from the total of the loss for Coverages **A, B** and **C.**

Earthquake rates/loss costs are displayed for the 5% and 10% deductible in the state company rates/ISO loss costs Rule **509.** Credit factors for deductible percentage amounts of 15%, 20% and 25% are provided in Paragraph **F.** Premium For Higher Deductibles of this rule.

E. Premium For Base Deductible

Develop the Base Premium as follows:

1. Determine whether Construction Table **A, B,** and/or **C** applies for the appropriate deductible. Refer to state company rates/ISO loss costs.
2. Determine the Earthquake territory according to the ZIP code of the residence premises from the State Territory Definitions section in this Manual.
3. Add the results of the following three steps:
   a. Multiply the Coverage **A** limit by the state company rates/ISO loss costs found in Column A of the table;
   b. Multiply the Coverage **C** limit by the state company rates/ISO loss costs found in Column B of the table; and
   c. Multiply the sum of the Additional Coverage **D** and **E** limits by the state company rates/ISO loss costs found in Column C of the table.
4. For Building or Non-Building Structure Items – All Forms:

   Multiply the state company rates/ISO loss costs in Column C of the Table by the appropriate limit of liability for Other Building Coverage options (for example, Bldg. Items Coverage; Improvements, Alterations and Additions – Increased Limits and Other Personal Property Coverage – Merchandise in Storage).
5. For Ordinance or Law – Basic and Increased Limit – All Forms:

   Multiply the state company rates/ISO loss costs determined in **E.3.a.** by the Ordinance or Law total amount of insurance. This includes basic and, if applicable, increased amounts.

F. Premium For Higher Deductibles

Multiply the Base Premium determined in Paragraph **E.** by a factor from the following table:

Deductible Percentage	Frame	Masonry	Superior
15%	.80	.85	.75
20%	.65	.70	.60
25%	.50	.60	.45

Table 509.F. Higher Deductibles Factors

G. Building Code Effectiveness Grading

Refer to General Rule **410.** Building Code Effectiveness Grading for information which may affect Earthquake rating.

RULE 510.
THEFT COVERAGE

A. Introduction

A Fire policy insuring Coverage **A** or **C** may be extended, for an additional premium, to provide On and Off-Premises Coverage for the perils of Theft and Vandalism and Malicious Mischief (V.&M.M.) resulting from theft.

1. Owner-Occupied Dwellings, Co-Op Or Condo Units; And Apartments Occupied By Tenant (Named Insured)

a. Coverage Description

The policy may be extended to provide On or Off-Premises Coverage.

b. Minimum Limit Of Liability

The minimum limit of liability is $1,000 each for On and Off-Premises Coverage.

c. Off-Premises Coverage

Off-Premises Coverage is **only** available when On-Premises Coverage is purchased.

The limit of liability shall not be greater than that selected for On-Premises Coverage.

d. Endorsement

Use Broad Theft Coverage Endorsement **DP 04 72.**

2. Non-Owner-Occupied Dwellings, Co-op Or Condo Units; And Apartments Occupied By Tenant (Other Than Named Insured)

a. Coverage Description

The policy may be extended to provide On-Premises Coverage **only.**

b. Limit Of Liability

The minimum limit of liability is $1,000.

c. Endorsement

Use Limited Theft Coverage Endorsement **DP 04 73.**

B. Premium Computation

Refer to state company rates/ISO loss costs for the Base Deductible.

Compute the premiums separately for each premises in the manner and sequence that follows:

1. Theft And Vandalism And Malicious Mischief

a. Owner-Occupied Dwellings

Compute the premiums for the desired limit of liability separately for On and Off-Premises Coverage.

b. Non-Owner-Occupied Dwellings, (On-Premises Only)

Multiply the On-Premises premium computed above by a factor of 1.50.

2. Burglar Alarm Discount (On-Premises Only)

a. Approved and properly maintained installations of burglar alarms in the dwelling may be recognized for a reduced premium – developed by applying the selected factors to the premiums computed in Paragraph **B.1.a.** or **B.1.b.**

Type Of Installation∗	Factor
Central Station Reporting Burglar Alarm	.95 to 1.00
Police Station Reporting Burglar Alarm	.97 to 1.00
Local Burglar Alarm	.98
∗ Refer to company for eligibility, types of systems and devices, installations and available credits.	

Table 510.B.2.a. Factors

b. Use Premises Alarm Or Fire Protection System Endorsement **DP 04 70.**

C. Deductibles

1. Base Deductible

$250 Deductible.

2. Optional Deductibles

To compute the premium for this provision, multiply the premium for the Base Deductible computed in Paragraph **B.1.** by the factor listed in the following table:

Deductible∗	Factor
$ 100	1.20
$ 500	.95
$ 1,000	.80
$ 2,500	.65
∗ Refer to the state company rates pages for the minimum annual additional premium charge that applies per policy	

Table 510.C.2 Factors

RULE 511. SINKHOLE COLLAPSE COVERAGE

A. Coverage Description

The policy may endorsed to provide Sinkhole Collapse Coverage.

B. Premium Computation

1. Refer to state company rates/ISO loss costs and;

2. Multiply the rate per $1,000 by:

a. Coverage **A, B** and/or **C** amounts of insurance;

b. Improvements, Alterations and Additions – Increased Limits;

c. Other Building or Structure Options (for example Bldg. Items Coverage);

d. Other Personal Property Coverage Options (for example Merchandise in Storage);

e. Ordinance or Law Coverage, basic amount and, if applicable, increased amount of coverage.

C. Endorsement

Use Sinkhole Collapse Endorsement **DP 04 99.**

RULE 512. WINDSTORM OR HAIL COVERAGE – AWNINGS, SIGNS AND OUTDOOR RADIO AND TELEVISION EQUIPMENT

A. Coverage Description

The peril of Windstorm or Hail does **not** cover:

1. Awnings, Signs and Outdoor Radio and Television Equipment in **DP 00 01** or **DP 00 02;**

2. Outdoor Radio and Television Equipment in **DP 00 03;**

whether or not attached to a Dwelling Building or Other Structure.

B. Premium Computation

Coverage may be provided for an additional premium. Refer to the state company rates/ISO loss costs.

C. Endorsement

Use Windstorm Or Hail – Radio And Television Antennas, Awnings And Signs Endorsement **DP 04 19.**

RULE 513. WATER BACK UP AND SUMP OVERFLOW

A. Coverage Description

The policy forms exclude coverage for loss resulting from water or water-borne material which backs up through sewers or drains or which overflows or is discharged from a sump, sump pump or related equipment.

B. Coverage Option

The policy may be endorsed to provide such coverage for a limit of liability of $5,000 subject to a $250 deductible. No other deductible option is available.

C. Premium Computation

Refer to state company rates/ISO loss costs.

D. Endorsement

Use Water Back Up And Sump Discharge Or Overflow Endorsement **DP 04 95.**

RULE 514. ASSISTED LIVING CARE COVERAGE

A. Introduction

The policy provides coverage to named insureds and resident relatives who are members of the insured's household.

B. Coverage Description

1. The policy may be endorsed to provide personal property and additional living expense coverage to a person regularly residing in an Assisted Living Care facility, provided such person:

a. Is related to an insured by blood, marriage or adoption; and

b. Is not a member of that insured's household.

2. An assisted living care facility is a facility that provides assisted living services such as dining, therapy, medical supervision, housekeeping and social activities. It is **not** a hospice, prison or rehabilitation facility.

3. The endorsement provides the following basic limits of coverage:

a. $10,000 for Coverage **C** – Personal Property with limitations ranging from $100 to $500 for certain items of property; and

b. $6,000, at $500 per month, for Additional Living Expenses.

C. Premium

Refer to state company rates/ISO loss costs.

D. Endorsement

Use Assisted Living Care Coverage Endorsement **DP 04 59.**

RULE 515. MOTORIZED GOLF CART – PHYSICAL LOSS COVERAGE

A. Coverage Description

The policy may be endorsed to provide coverage for physical loss to a motorized golf cart, including permanently installed accessories, equipment and parts, owned by an insured.

Also covered, for an amount equal to 10% of the limit of the highest scheduled cart, are accessories, equipment or parts designed or made solely for the cart that are **not** permanently installed provided such property is at an insured's residence or in or upon the cart off the insured's residence at the time of loss.

Coverage for loss caused by collision is optional and only applies if declared on the schedule of the endorsement.

B. Eligibility

To be eligible for coverage, the motorized golf cart shall be of the type designed to carry up to four people on a golf course for the purpose of playing golf and shall not have been built, or modified after manufacture, to exceed a speed of 25 m.p.h. on level ground.

Read the endorsement for all conditions of coverage.

C. Limit Of Liability

The limit of liability shall be selected by the insured. However, that limit should be representative of the actual cash value of the motorized golf cart including any permanently installed accessories, etc.

D. Deductible

A deductible amount of $500 applies separately to each involved golf cart and, separately to Property Coverages if not in or upon a golf cart at the time of loss.

The $500 deductible replaces any other deductible in the policy with respect to property covered under the endorsement.

E. Premium Computation

Rate each cart separately using the rate per $500 of insurance. Refer to state company rates/ISO loss costs.

F. Endorsement

Use Owned Motorized Golf Cart – Physical Loss Coverage Endorsement **DP 05 28.**

RULE 516. GRAVEMARKERS

A. Coverage Description

Coverage for gravemarkers, including mausoleums, is not included in the forms. The policy may be endorsed to provide $5,000 in coverage for gravemarkers, including mausoleums, on the Described Location.

B. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

C. Endorsement

Use Gravemarkers Endorsement **DP 04 58.**

RULE 517. LIMITED FUNGI, WET OR DRY ROT, OR BACTERIA COVERAGE

A. Coverage Description

When the optional Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage Endorsement is attached to the policy, limited amounts of insurance are automatically provided as follows:

$10,000 to pay for loss to covered real or personal property, owned by an insured, that is damaged by fungi, wet or dry rot, or bacteria on the described location.

This Coverage applies only for the policy period in which the loss or costs occur.

If more than one location is insured under this policy, enter the address of such locations on this endorsement or the policy declarations.

B. Increased Limits

1. Limits may be increased to $25,000 or $50,000. The limit selected is entered on the coverage endorsement or the policy declarations.
2. Refer to Paragraph **D.** Rating Basis, for premium computation instructions.

RULE 517.
LIMITED FUNGI, WET OR DRY ROT, OR BACTERIA COVERAGE (Cont'd)

C. Application Of Limits Of Liability

For Property Coverage, $10,000 or the limit selected is the most coverage that will be provided during the policy period regardless of the number of locations insured for Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage or the number of claims made during the policy period.

D. Premium Computation

1. Basic Limits

There is no premium adjustment.

2. Increased Limits

Refer to state company rates/ISO loss costs for an additional charge.

E. Endorsement

1. Use Limited Fungi, Wet Or Dry Rot, Or Bacteria Endorsement **DP 04 22.**
2. The subject optional endorsement titled Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage provides complete details on coverages, limitations, definitions and additional policy conditions applicable to this coverage. Enter the applicable limit of liability that applies for the Other Coverage Limited Fungi, Wet Or Dry Rot, Or Bacteria. Also enter on this endorsement the address of all locations to be insured for Limited Fungi, Wet Or Dry Rot, Or Bacteria.

RULE 518. – RULE 600.
RESERVED FOR FUTURE USE

ADDITIONAL RULE(S)

RULE A1. SPECIAL STATE REQUIREMENTS

A. Special Provisions Endorsement DP 32 32

Use this endorsement with all Dwelling Policies.

B. Windstorm Exterior Paint And Waterproofing Exclusion Endorsement DP 32 61

Use this endorsement with **all** Dwelling Policies covering Extended Coverage in Territories 05 and 06.

C. Company Rates/State Rates

References in the manual to "state company rates" means "state rates" in North Carolina.

D. Flood, Earthquake, Mudslide, Mudflow Or Landslide Insurance Notice

North Carolina law provides that an insurer selling property insurance that does not provide coverage for the perils of flood, earthquake, mudslide, mudflow, or landslide shall provide a specific notice (a "warning" set forth in the related statute) to the policyholder as to which of the listed perils are not covered under the policy.

The required notice must be:

1. Provided upon issuance and renewal of each policy;
2. In Times New Roman 16-point font or another equivalent font; and
3. Must be included in the policy on a separate page immediately before the Declarations.

The following warning, citing which peril is not covered, must be furnished with each new policy and upon each renewal:

"WARNING: THIS PROPERTY INSURANCE POLICY DOES NOT PROTECT YOU AGAINST LOSSES FROM [FLOODS], [EARTHQUAKES], [MUDSLIDES], [MUDFLOWS], [LANDSLIDES]. YOU SHOULD CONTACT YOUR INSURANCE COMPANY OR AGENT TO DISCUSS YOUR OPTIONS FOR OBTAINING COVERAGE FOR THESE LOSSES. THIS IS NOT A COMPLETE LISTING OF ALL OF THE CAUSES OF LOSSES NOT COVERED UNDER YOUR POLICY. YOU SHOULD READ YOUR ENTIRE POLICY TO UNDERSTAND WHAT IS COVERED AND WHAT IS NOT COVERED."

RULE A2. RESTRICTION OF INDIVIDUAL POLICIES

If a Dwelling Policy would not be issued because of unusual circumstances or exposures, the named insured may request a restriction of the policy provided no reduction in premium is allowed. Such request shall be referred to the company.

RULE A3. WINDSTORM OR HAIL EXCLUSION – TERRITORIES 05, 06, 42 AND 43 ONLY

A. Introduction

The peril of Windstorm or Hail may be excluded if:

1. The property is located in an area eligible for such coverage from the North Carolina Insurance Underwriting Association; and
2. A Windstorm or Hail Rejection Form is secured and maintained by the company.

B. Premium Computation

1. To compute the Extended Coverage Non-seasonal or Seasonal Base Premium or the Broad or Special Form Non-seasonal Base Premium:
   - **(a)** Determine the Extended Coverage, Broad or Special Form Key Premium as described in Rule **301.**
   - **(b)** Subtract the Windstorm Or Hail Exclusion Credit shown on the state rates from the Extended Coverage, Broad or Special Form Key Premium.
   - **(c)** Multiply the Extended Coverage, Broad or Special Form Key Premium excluding Windstorm or Hail Coverage developed in Paragraph **(b)** by the Key Factor for the desired limit of liability.
2. To compute the Seasonal Broad or Special Form Base Premium:
   - **(a)** Determine the **DP 00 01** Extended Coverage Key Premium as described in Rule **301.**
   - **(b)** Multiply the **DP 00 01** Extended Coverage Key Premium by the appropriate Seasonal factor shown in Table **301.A.#26(LC)** or Table **301.A.#29(LC)** to determine the Seasonal Broad or Special Form Key Premium.
   - **(c)** Subtract the Windstorm Or Hail Exclusion Base Credit shown on the state rates from the Seasonal Broad or Special Form Key Premium determined in Paragraph **(b).**
   - **(d)** Multiply the Seasonal Broad or Special Form Key Premium excluding Windstorm Or Hail Coverage developed in Paragraph **(c)** by the Key Factor for the desired limit of liability.

C. Endorsement

Use Windstorm Or Hail Exclusion – North Carolina Endorsement **DP 32 87.**

When Windstorm Or Hail Exclusion Endorsement **DP 32 87** is attached to the policy, enter the following in Declarations:

"This policy does not provide coverage for the peril of Windstorm or Hail."

RULE A4.
REPLACEMENT COST COVERAGE – DP 00 01 ONLY

A. The policy may be endorsed to provide replacement cost coverage on buildings without deduction for depreciation.

B. This rule is intended to have limited application. Use it **only** on those **DP 00 01** policies that currently use it. Do **not** use it on any new policies.

Use Replacement Cost Endorsement **DP 32 62.**

RULE A5.
INSTALLMENT PAYMENT PLAN

When an annual policy is issued on an installment basis, the following rules apply:

A. The first installment shall be due on the effective date of the policy and the due date of the last installment shall be no later than one month prior to the policy anniversary date.

B. The premium calculated for the first installment payment, exclusive of installment charges, shall not be less than the pro rata charge for the period from the inception date of the policy to the due date of the next installment.

C. Refer to the state rates for the additional charge that shall be made for each installment.

RULE A6.
UNPROTECTED DWELLINGS – PROTECTION CLASS 9, 9E, 9S OR 10

A. Unprotected Dwellings

Unprotected dwellings are dwellings located in areas:

1. With no fire protection, in which case, Class 10 premiums apply; or

2. Designated as protection Class 9, 9E, 9S or 10, in which case, the premiums shown for these classifications apply.

B. Seasonal Dwelling

1. When the heating, plumbing and telephone facilities are suspended during the period of seasonal unoccupancy, attach Seasonal Dwelling Endorsement **DP 32 47** to the policy.

2. To determine the premium, multiply the premium developed in Paragraph **A.** by a factor of 1.10.

C. Vacancy Period Extension

The policy provides coverage for a vacant dwelling only if the period of vacancy does not exceed 60 consecutive days. This period may be extended by use of one of the two following options:

1. Vacancy And/Or Unoccupancy Permit – Unprotected Dwellings Endorsement **DP 32 52**

The additional premium for this option shall be the lower of the following calculations:

a. Multiply the limits of liability shown in the policy for Coverages **A, B** and **C** and for other coverages by the rate displayed on the state rates Table **A6.C.1.a.(R).**

b. Multiply the policy premium for all perils and coverages by a factor of .10 for each additional 30 consecutive day period (or fraction thereof) of vacancy.

2. Two Thirds Vacancy Clause – Unprotected Dwellings North Carolina Endorsement **DP 32 53**

There is no additional premium for this option, but, during the additional period of vacancy, policy limits are reduced by 33 1/3%.

D. Unoccupancy Period Extension

The policy provides coverage for an unoccupied dwelling only if the period of unoccupancy does not exceed 90 consecutive days. This period may be extended – at no additional charge – for successive periods of up to:

1. 90 consecutive days each, for non-seasonal dwellings, or

2. 10 months each, for seasonal dwellings.

Use Vacancy And/Or Unoccupancy Permit – Unprotected Dwellings Endorsement **DP 32 52.**

RULE A7.
PRIMARY INSURANCE NOTICE

A. Endorsement

Coverage	DP 00 01	DP 00 02 And DP 00 03
A	DP 32 80	DP 32 83
B	DP 32 81	DP 32 84
C	DP 32 82	DP 32 85

Table A7.A. Primary Insurance Notice

Use the appropriate Primary Insurance Endorsement(s), specified in Table **A7.A.,** only with a North Carolina Joint Underwriting Association (NCJUA) or North Carolina Insurance Underwriting Association (NCIUA) policy insuring a dwelling building covered under Coverage **A,** structures covered under Coverage **B** or personal property covered under Coverage **C.**

These endorsements replace the Other Insurance Condition in the policy form and make the NCJUA or NCIUA policy primary insurance for the insured property specified on the endorsement. Primary Insurance may be written for Coverages **A, B** and/or **C.** When a Primary Insurance Endorsement is not attached to the policy, the Other Insurance Condition in the policy form is unchanged.

RULE A7.
PRIMARY INSURANCE NOTICE (Cont'd)

B. Rating

1. Primary Insurance

a. When the Coverage **A, B** or **C** Limit of Liability is less than 100% of actual cash value or replacement value, divide the selected limit by the ACV or replacement value, whichever applies. The result is the "Percent of Total Value".

b. Go to the First Loss Table and select the factor that corresponds to the "Percent of Total Value" computed in Paragraph **1.a.**

c. Multiply the total value of the dwelling (actual or replacement) by the factor selected in Paragraph **1.b.**

d. Use the resulting product as the limit for computing the Coverage **A, B** or **C** premium.

2. Coverage A Example

Replacement Value of Dwelling: $6,000,000

Primary Policy – Coverage **A** Limit: $1,500,000

a. Divide Coverage **A** Limit by Replacement Value limit ($1,500,000/$6,000,000 = 25% or 25.00 Percent of Total Value).

b. Find Factor that corresponds to Percent of Total Value.

c. Multiply Replacement Value by Factor from Column **2** ($6,000,000)(.712) = $4,272,000.

d. Use resulting product to compute Coverage **A** premium. (Rate the policy as if $4,272,000 is the Coverage **A** limit to be insured.)

Note

This procedure is used to determine the appropriate exposure basis for primary insurance. It does not increase the amount of coverage available.

RULE A7.
PRIMARY INSURANCE NOTICE Cont'd)

FIRST LOSS TABLE

(Used When Primary Coverage Provided)

% Of Total Value	Factor	% Of Total Value	Factor	% Of Total Value	Factor
1.00	.224	10.00	.540	56.00	.841
1.10	.229	11.00	.551	57.00	.844
1.20	.235	12.00	.563	58.00	.846
1.30	.241	13.00	.574	59.00	.848
1.40	.247	14.00	.586	60.00	.850
1.50	.252	15.00	.597	61.00	.853
1.60	.258	16.00	.609	62.00	.855
1.70	.264	17.00	.620	63.00	.857
1.80	.270	18.00	.632	64.00	.860
1.90	.275	19.00	.643	65.00	.862
2.00	.281	20.00	.655	66.00	.864
2.10	.284	21.00	.660	67.00	.867
2.20	.287	22.00	.678	68.00	.869
2.30	.290	23.00	.689	69.00	.871
2.40	.293	24.00	.701	70.00	.873
2.50	.296	25.00	.712	71.00	.876
2.60	.298	26.00	.720	72.00	.878
2.70	.301	27.00	.721	73.00	.880
2.80	.304	28.00	.734	74.00	.883
2.90	.307	29.00	.741	75.00	.885
3.00	.310	30.00	.748	76.00	.890
3.10	.316	31.00	.756	77.00	.894
3.20	.321	32.00	.763	78.00	.899
3.30	.327	33.00	.770	79.00	.903
3.40	.333	34.00	.773	80.00	.908
3.50	.339	35.00	.776	81.00	.913
3.60	.344	36.00	.780	82.00	.917
3.70	.350	37.00	.784	83.00	.922
3.80	.356	38.00	.788	84.00	.926
3.90	.362	39.00	.792	85.00	.931
4.00	.367	40.00	.795	86.00	.936
4.10	.373	41.00	.799	87.00	.940
4.20	.379	42.00	.802	88.00	.945
4.30	.385	43.00	.804	89.00	.949
4.40	.390	44.00	.808	90.00	.954
4.50	.396	45.00	.811	91.00	.959
4.60	.402	46.00	.815	92.00	.963
4.70	.408	47.00	.818	93.00	.968
4.80	.413	48.00	.821	94.00	.972
4.90	.419	49.00	.824	95.00	.977
5.00	.425	50.00	.827	96.00	.982
6.00	.448	51.00	.830	97.00	.986
7.00	.471	52.00	.832	98.00	.991
7.50	.482	53.00	.834	99.00	.995
8.00	.494	54.00	.837	100.00	1.000
9.00	.517	55.00	.839		

RULE A8. OPTIONAL RATING CHARACTERISTICS

Companies may use the following optional rating characteristics or any combination of such optional rating characteristics and Bureau filed characteristics to determine rates, as long as applicable legal requirements are satisfied. The resulting premium shall not exceed the premium that would have been determined using the rates, rating plans, classifications, schedules, rules and standards promulgated by the Bureau, except as provided by statute. The rating factor for any combination of the following optional risk characteristics cannot exceed 1.00, unless the resulting premium does not exceed the Bureau premium.

A. Policy characteristics not otherwise recognized in this manual. Examples include: account or multi-policy credit; tiers; continuity of coverage; coverages purchased; intra-agency transfers; payment history; payment options; prior insurance; and new and renewal status.

B. Policyholder/Insured personal characteristics not otherwise recognized in this manual. Examples include: smoker/non-smoker status; credit information; loss history; loss prevention training/education; age; work status; marital status; number of years owned; household composition; and good student/education.

C. Dwelling characteristics not otherwise recognized in this manual. Examples include: gated community; retirement community; limited access community; revitalized/renovated home; security, safety or loss deterrent systems or devices; age of home; and construction type and quality.

D. Affinity group or other group not otherwise recognized in this manual.

E. Any other rating characteristics or combination of characteristics if filed by a company and approved by the Commissioner.

PART I COVERAGE AND DEFINITION TYPE RULES

RULE 100. INTRODUCTION

Paragraph **C.** does not apply.

RULE 103. ELIGIBILITY

Paragraph **B.4.** is replaced by the following:

4. For a policy period of not longer than three years; and

RULE 104. PROTECTION CLASSIFICATION AND INFORMATION

Rule **104.** is replaced by the following:

The Protection Class listings in the Community Mitigation Classification manual apply to risks insured under Dwelling Program policies.

A. The protection class indicated applies in a municipality or classified area where a single class of fire protection is available throughout (8, 7, 6, etc.).

B. In a classified area where a single classification is "9E", the classification is determined as follows:

Distance To Fire Station	Class
1. 5 road miles or less	9S
2. Between 5 and 6 road miles	9E

Table 104.B. Two Or More Classifications

C. In a classified area where two or more classifications are shown (Example: 6/9 or 6/9S), the classification is determined as follows:

Distance To Fire Station	Class
1. 5 road miles or less with hydrant within 1,000 feet	*
2. 5 road miles or less with hydrant beyond 1,000 feet	9 or 9S
3. Over 5 road miles	10
* First protection class (Example: 6/9 ... use Class 6)	

Table 104.C. Two Or More Classifications

D. In a classified area where two or more classifications are shown and an "E" is designated (Example: 6/9E), the classification is determined as follows:

Distance To Fire Station	Class
1. 5 road miles or less with hydrant within 1,000 feet	*
2. 5 road miles or less with hydrant beyond 1,000 feet	9S
3. Between 5 and 6 road miles	9E
4. Over 6 road miles	10
* First protection class (Example: 6/9E ... use Class 6)	

Table 104.D. Two Or More Classifications

RULE 104.
PROTECTION CLASSIFICATION CODES AND INFORMATION (Cont'd)

E. In a classified area where split classifications are shown where no hydrants are installed (Example: 9/10), or where the hydrant distance does not apply due to an alternate creditable water supply (Example: 7/10), the classification is determined as follows:

1. If the split class is X/10 (Example: 7/10):

a. Within 5 road miles of fire station, unless otherwise indicated, use first protection class.

b. Over 5 road miles from fire station, use class 10.

2. If the split class is X/9E (Example: 7/9E):

a. Within 5 road miles of fire station, unless otherwise indicated, use first protection class.

b. Between 5 and 6 road miles of fire station use Class 9E.

c. Over 6 road miles from fire station, use class 10.

F. Rural Fire Protection Districts are areas which have been inspected and for which protection classes are published.

G. All other properties are class 10.

PART II
SERVICING TYPE RULES

RULE 201.
POLICY PERIOD

Paragraph **C.** is replaced by the following:

C. Three years in annual installments. Each annual installment shall be the annual premium then in effect for the company.

RULE 206.
MINIMUM PREMIUM

Paragraphs **D.** and **E.** are replaced by the following:

D. Refer to state company rates for the minimum premium.

RULE 208.
WAIVER OF PREMIUM

Paragraph **B.** is replaced by the following:

B. Refer to state company rates for amount that may be waived.

PART III
BASE PREMIUM COMPUTATION RULES

RULE 302.
VANDALISM AND MALICIOUS MISCHIEF – DP 00 01

The following is added to Rule **302.:**

The 60 day limit of vacancy may be extended. The charge for the additional period of vacancy shall be based on the difference between the premiums for vacant and non-vacant buildings, and shall be figured pro rata for the period allowed in the endorsement.

Use Vandalism And Malicious Mischief Vacancy Endorsement **DP 04 40.**

RULE 305.
LOSS SETTLEMENT OPTIONS

Paragraph **A.4.** is replaced by the following:

A. Functional Replacement Cost Loss Settlement – Forms DP 00 02 And DP 00 03 Only

4. Endorsement

Use Functional Replacement Cost Loss Settlement – North Carolina Endorsement **DP 32 63.**

Paragraph **B.** is replaced by the following:

B. Actual Cash Value Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on an actual cash value basis if, on the inception date of the policy, the Coverage **A** limit of liability selected by the insured is less than 80% of the full replacement cost of the dwelling.

3. Mobile Or Trailer Home

When written in conjunction with this endorsement, Form **DP 00 02** may be used to insure a mobile or trailer home.

To develop the Base Premium, multiply the premium developed in Rule **301.** by a factor of .98.

RULE 305.
LOSS SETTLEMENT OPTIONS (Cont'd)

4. Dwelling Building Other Than Mobile Or Trailer Home

The premium is computed as follows:

a. Multiply the Coverage **A** limit of liability by the appropriate factor from the following table and round to the nearest $1,000:

% Of Replacement Value∗	Factor
20%	4.00
30%	2.67
40%	2.00
50%	1.60
60%	1.33
70%	1.14

Table 305.B.4.a. Factors

b. Develop a Base Premium in accordance with Rule **301.** for the amount of insurance computed in Paragraph **B.4.a.**

c. Multiply the premium determined in Paragraph **B.4.b.** by the appropriate factor from the following table:

% Of Replacement Value∗	Factor
20%	.73
30%	.74
40%	.75
50%	.76
60%	.77
70%	.78
80%	.80

Table 305.B.4.c. Factors

5. Endorsement

Use Actual Cash Value Loss Settlement Endorsement **DP 04 76.**

PART IV
ADJUSTED BASE PREMIUM COMPUTATION RULES

RULE 406.
DEDUCTIBLES

The introductory text in Rule **406.** preceding Paragraph **A.** is replaced by the following:

All policies are subject to a deductible that applies to loss from all perils, except Earthquake. A separate deductible type applies to Earthquake Coverage.

Refer to the Earthquake Coverage rule for the applicable deductible provision.

Table **406.B.1.** is replaced by the following:

Deductible	Factors
$ 100∗	1.05
500	.95
1,000	.89
2,500	.81

∗ Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 Perils Deductibles.

Table 406.B.1. All Perils Deductibles

Paragraph **B.2.a.(6)** is deleted and replaced by the following:

B. Optional Deductibles

2. Windstorm Or Hail Deductibles

a. Percentage Deductibles

(6) Deductible Factors

In Territories 05, 06, 42 and 43 only, when the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA), additional calculations must be performed to ensure that the premium credit applied to the deductible is **not** greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

(a) Property **Not** Located in Area Serviced by the NCIUA

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected for the desired windstorm or hail deductible options from the following tables.

(b) Property **Is** Located in Area Serviced by the NCIUA

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rates, under Additional Rule **A3.** – Windstorm Or Hail Exclusion, by the Key Factor, for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

RULE 406.
DEDUCTIBLES (Cont'd)

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired windstorm or hail deductible option from the following tables and subtract the factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the windstorm or hail deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less than** the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired windstorm or hail deductible option.

Coverage A, B, D Or E And Coverage Options For Buildings And Non-Building Structures			
All Other Perils	**Windstorm Or Hail Deductible Amounts**		
Ded. Amt.	**1%**	**2%**	**5%**
$ 100	.99	.92	.82
250	.93	.86	.77
500	.88	.81	.71
1,000	.72	.72	.63
2,500	.49	.49	.48

Table 406.B.2.a.(6)(b)#1 Factors

Coverage C And Other Personal Property Coverage Options*	
All Other Perils Ded. Amt.	**Windstorm Or Hail 1%, 2% Or 5% Deductible**
$ 100	1.07
250	.99
500	.90
1,000	.72
2,500	.49
* Only use when policy also covers building or non-building structures	

Table 406.B.2.a.(6)(b)#2 Factors

Paragraph **B.2.b.(5)** is replaced by the following:

b. Higher Fixed-Dollar Deductibles

(5) Deductible Factors

In Territories 05, 06, 42 and 43 only, when the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA), additional calculations must be performed to ensure that the premium credit applied to the deductible is **not** greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

(a) Property **Not** Located in Area Serviced by the NCIUA

Multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected for the desired windstorm or hail deductible options from the following tables.

(b) Property **Is** Located in Area Serviced by the NCIUA

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rates under Additional Rule **A3.** – Windstorm Or Hail Exclusion, by the Key Factor, for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

RULE 406.
DEDUCTIBLES (Cont'd)

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired windstorm or hail deductible option from the following tables and subtract the factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the windstorm or hail deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less than** the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired windstorm or hail deductible option.

Coverage A, B, D Or E And Coverage Options For Buildings And Non-Building Structures			
All Other Perils Ded. Amt.	**Windstorm Or Hail Deductible Amounts 1,000**	**2,000**	**5,000**
$ 100	.95	.87	.83
250	.89	.81	.77
500	.84	.76	.72
1,000	--	.68	.64
2,500	--	--	.49

Table 406.B.2.b.(5)(b)#1 Factors

Coverage C And Other Personal Property Coverage Options*	
All Other Perils Ded. Amt.	**Windstorm Or Hail Deductible Amounts $1,000, $2,000, $5,000**
$ 100	.97
250	.90
500	.82
1,000	.68
2,500	.49

* Only use when policy also covers building or non-building structures

Table 406.B.2.b.(5)(b)#2 Factors

The following is added to Paragraph **B.:**

3. Named Storm Percentage Deductible – Territories 05, 06, 42 And 43 Only

a. Deductible Amounts

The Named Storm Percentage Deductible option is used in conjunction with a deductible applicable to all other perils.

A percentage amount of 1%, 2% or 5% of the Coverage **A, B, C, D** or **E** limit of liability, whichever is greatest, is available when the dollar amount of the percentage deductible selected exceeds the amount of the deductible applicable to all other perils.

b. Endorsement

Use Named Storm Percentage Deductible – North Carolina Endorsement **DP 03 60.**

c. Schedule Instructions

Enter on Endorsement **DP 03 60** or the policy declarations the percentage amount that applies to Named Storm.

d. Loss By Windstorm That Is A Named Storm

In the event of Named Storm loss to covered property, the dollar amount is deducted from the total of the loss for all coverages.

e. Deductible Factors

The factors displayed below incorporate the factors for the All Perils Deductibles shown in Paragraph **B.1.** Do **not** use the factors for the All Perils Deductibles when rating a policy with a higher Named Storm deductible.

Additional calculations must be performed to ensure that the premium credit applied for the deductible is not greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

RULE 406.
DEDUCTIBLES (Cont'd)

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rate pages, under Additional Rule **A3.** Windstorm Or Hail Exclusion – Territories 05, 06, 42, And 43 Only, by the Key Factor, for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired named storm deductible option from the following table and subtract that factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the named storm deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:
Step **2.** is **less** than the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.
Step **2.** is **greater than or equal to** the result in Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired named storm deductible option.

Territories 05, 06, 42 & 43			
Named Storm Deductible Percentage	**All Other Perils Deductible Amount**	**Coverage A, B, D, Or E And Coverage Options For Building And Non-building Structures**	**Coverage C And Other Personal Property Coverage Options**
1%	$ 100	1.00	1.08
	250	.94	1.00
	500	.89	.91
	1,000	.73	.73
	2,500	.50	.50
2%	100	.93	1.08
	250	.87	1.00
	500	.82	.91
	1,000	.73	.73
	2,500	.50	.50
5%	100	.83	1.08
	250	.78	1.00
	500	.72	.91
	1,000	.64	.73
	2,500	.49	.50

Table 406.B.3.e Named Storm Percentage Deductible

RULE 407.
AUTOMATIC INCREASE IN INSURANCE

Rule **407.** is replaced by the following:

A. Automatic Increase In Insurance Endorsement – DP 32 11

1. The policy may be endorsed to provide automatic annual increases in the Coverage **A, B** and **C** limits of liability. Apply a factor to the Base Premium as follows:

Amount Of Annual Increase	Factor
4%	1.02
6%	1.03
8%	1.04
Each Additional 4% over 8% add:	.02

Table 407.A.1. Factors

2. The premium for a 3 year policy is 3.2 times the annual policy premium.

3. Use Automatic Increase In Insurance Endorsement **DP 32 11.**

B. Inflation Guard Endorsement – DP 32 70

1. The policy may be extended to automatically adjust the limit of liability applicable to Coverage **A** under the Dwelling Policy. This limit will be adjusted at the same rate as the change in the Index shown on the Declarations, billing notice or named on the form.

RULE 407.
AUTOMATIC INCREASE IN INSURANCE (Cont'd)

2. There is no additional charge for this endorsement. Companies electing to use this endorsement must use it exclusively and are required to notify the North Carolina Rate Bureau of their election.

3. The following Indexes have been approved by the Department of Insurance and may be used with the approved Inflation Guard Endorsement:

(a) Marshall & Swift Boeckh (MS/B) Residential Cost Index published by the American Appraisal Company, Inc.;

(b) Composite Construction Cost Index published by the U.S. Department of Commerce;

(c) Consumer Price Index published by the U.S. Department of Labor;

(d) Marshall & Swift Boeckh (MS/B) Construction Cost Index published Marshall & Swift Boeckh (MS/B);

(e) RSMeans CostWorks Valuator published by RSMeans.

4. Use Inflation Guard Endorsement **DP 32 70.**

RULE 408.
ALARMS, SMOKE DETECTORS, FIRE EXTINGUISHERS AND AUTOMATIC SPRINKLERS

The title of Rule **408.** Protective Devices is replaced by the preceding title.

Rule **408.** is replaced by the following:

A. Approved and properly maintained installations of fire alarms, smoke detectors, automatic sprinklers and fire extinguishers in the dwelling may be recognized for a reduced premium – computed by multiplying the fire Base Premium by the selected factors as follows.

Type Of Installation*	Dwelling Factor	Mobile Or Trailer Home Factor
Central Station Reporting Fire Alarm	.90	.92
Fire Department Reporting Fire Alarm	.93	.95
Local Fire Alarm Smoke Detectors	.95	.97
Automatic Sprinklers in all areas including attics, bathrooms, closets, attached structures	.80	.90
Automatic Sprinklers in all areas except attic, bathroom, closet and attached structure areas that are protected by a fire detector	.90	.95
Fire Extinguishers	.95	.95
* Refer to Company for eligibility, types of systems and devices, installation, and available credits.		

Table 408.A. Protective Devices Factors

B. A premium credit for Fire Extinguishers shall be allowed if the dwelling has, installed on each floor and basement in a readily accessible place, at least:

1. One fire extinguisher classified and labeled as 2-A (classified as A-1 prior to July 1, 1956), or

2. Two fire extinguishers classified and labeled as 1-A (classified as A-2 prior to July, 1956).

The extinguishers must be maintained in good, working order.

C. Use Premises Alarm Or Fire Protection System Endorsement **DP 32 50.**

RULE 409.
ACTUAL CASH VALUE LOSS SETTLEMENT WINDSTORM OR HAIL LOSSES TO ROOF SURFACING – DP 00 02, DP 00 03 AND DP 00 01 WITH DP 00 08

Rule **409.** does not apply.

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING

Rule **410.** does not apply.

PART V
ADDITIONAL COVERAGES AND INCREASED LIMITS RULES

RULE 502.
COVERAGE D – FAIR RENTAL VALUE COVERAGE E – ADDITIONAL LIVING EXPENSE

Paragraph **A.** is replaced by the following:

A. Introduction

Coverage is provided in the forms on a limited basis as follows:

1. Form DP 00 01

a. Coverage D

Up to 10% of the Coverage **A** limit is available. Use of this option reduces the Coverage **A** limit for the same loss.

b. Coverage E

Not automatically included in form. It may be added as noted in Paragraph **B.**

2. Form DP 00 02 Or DP 00 03

Coverage **D** and **E** combined – Up to 10% of the Coverage **A** limit is available for Coverage **D** and Coverage **E** combined as additional insurance.

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

Rule **507.** is replaced by the following:

The limit of $500 provided under the policy may be increased. Refer to the state rates.

RULE 509.
EARTHQUAKE COVERAGE

Rule **509.** is replaced by the following:

A. Coverage Description

When added to the Fire policy, this peril shall apply to the same coverages and for the same limits that apply to the peril of Fire.

Use Earthquake Coverage Endorsement **DP 04 69.**

B. Loss Assessment Coverage

When the policy is extended to cover loss assessment resulting from loss by this peril, the limit of liability shall be based on the insured's proportionate interest in total value of all collectively owned buildings and structures of the corporation or association of property owners. Refer to company for rates.

Use Loss Assessment Coverage For Earthquake Endorsement **DP 04 68.**

C. Deductible

The base deductible is 5% of the limit of liability for Coverage **A, B** or **C,** whichever is greatest and is subject to a $250 minimum.

This deductible may be increased for a premium credit. In the event of an Earthquake loss to covered property, the dollar amount is deducted from the total of the loss for Coverages **A, B** and **C.**

D. Premium For Base Deductible

Develop the premium as follows:

1. From the state rates:

a. Determine the Earthquake Zone;

b. Determine if Rate Table **A,** and/or **B** applies;

c. Select the rate according to construction from the Rate Table; and

2. Multiply the rate determined in Paragraph **D.1.c.** by the amounts of insurance for:

a. Coverages **A, B, C, D** and **E;**

b. Improvements, Alterations and Additions – Increased Limits;

c. Other Building Coverage options (i.e. Bldg. Items Coverage);

d. Other Personal Property Coverage (i.e. Merchandise in Storage);

e. Ordinance or Law total amount of insurance (includes basic, and if applicable, increased amounts).

E. Premium for Higher Deductibles

Multiply the Base Premium determined in Paragraph **E.** by a factor from the following table:

Deductible Percentage	Frame And Superior	Masonry
10%	.89	.95
15%	.78	.89
20%	.67	.84
25%	.56	.79

Table 509.E. Higher Deductibles Factors

RULE 510.
THEFT COVERAGE

This rule is deleted.

Refer to the Theft Insurance program filed by or on behalf of the company insuring the risk.

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES

The title of Rule **512.** Windstorm Or Hail Coverage - Awnings, Signs And Outdoor Radio And Television Equipment is replaced by the preceding title.

Rule **512.** is replaced by the following:

A. Property Not Covered

The peril of Windstorm or Hail does **not** cover damage to the following properties whether attached to or separated from a dwelling or other structure on the Described Location:

1. Signs or cloth awnings, including their supports;

2. Radio or television antennas or aerials, including their lead-in wiring, masts or towers;

3. Swimming pools;

4. Screens, including their supports, around a swimming pool, patio or other areas;

5. Fences, property line and similar walls, including seawalls;

6. Bathhouses, cabanas, greenhouses, hothouses, pergolas, slathouses, trellises;

7. Outdoor equipment used to service the Described Location; or

8. Structures located over water, whether or not permanently attached to the ground, including the property in or on the structure.

B. Endorsement

Damage to these properties may be covered for an additional premium. Separately describe each property item and corresponding limit of liability on Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations.

C. Greenhouses And/Or Hothouses

1. When the structure, greenhouse (hothouse) glass and any flowers and plants contained in the structure are insured as a single item:

a. Include, in the limit of liability for each structure, the value of all glass, as computed in Paragraph **1.c.,** and the value of any flowers and plants in that structure;

b. Add the "Glass Condition of Insurance", in Paragraph **3.a.** of this rule, to Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations; and

c. Specify, in the "Glass Condition of Insurance", the dollar amount of all glass being insured. This amount is determined by multiplying the agreed value per square foot of glass by the number of square feet of all insured glass.

2. When the structure, greenhouse (hothouse) glass or the flowers and plants contained in the structure are **separately** insured, specify the limit of liability **separately** for each structure, all glass and the flowers and plants in that structure.

When glass is separately insured:

a. Add the "Glass Condition of Insurance", in Paragraph **3.b.** of this rule, to Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations; and

b. Specify, in the "Glass Condition of Insurance", the agreed value per square foot of glass and the number of square feet of all glass. The limit of liability of all glass being insured is determined by multiplying these two amounts.

3. Glass Condition of Insurance

a. Use this Condition when glass is **not** separately insured:

"Windstorm or Hail Coverage for Greenhouse (Hothouse) Glass

It is understood by you and us that, in the event greenhouse (hothouse) glass is broken or destroyed by the peril of Windstorm or Hail, we will pay no more than the least of the following amounts:

A. $____. This dollar amount for greenhouse (hothouse) glass is determined by multiplying:

1. The agreed value per square foot of greenhouse (hothouse) glass, $____, by

2. The number of square feet of all insured greenhouse (hothouse) glass, ____;

B. An amount computed by:

1. Dividing the number of square feet of all broken or destroyed greenhouse (hothouse) glass by the total number of square feet of insured greenhouse (hothouse) glass, and

2. Multiplying the amount computed in **B.1.** above by the dollar amount for greenhouse (hothouse) glass stated in **A.** above; or

C. The actual cost to repair or replace the broken or destroyed greenhouse (hothouse) glass.

Also, if greenhouse (hothouse) glass is covered by other insurance, we will pay no more than the proportion of a loss that the dollar amount for such greenhouse (hothouse) glass stated in **A.** above bears to the total amount of insurance covering that glass".

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES (Cont'd)

b. Use this Condition when glass **is** separately insured:

"Windstorm or Hail Coverage for Greenhouse (Hothouse) Glass

It is understood by you and us that, in the event greenhouse (hothouse) glass is broken or destroyed by the peril of Windstorm or Hail, we will pay no more than the least of the following amounts:

A. The limit of liability declared above for greenhouse (hothouse) glass, which is determined by multiplying:

1. The agreed value per square foot of greenhouse (hothouse) glass, $ ____, by

2. The number of square feet of all insured greenhouse (hothouse) glass, ____;

B. An amount computed by:

1. Dividing the number of square feet of all broken or destroyed greenhouse (hothouse) glass by the total number of square feet of insured greenhouse (hothouse) glass, and

2. Multiplying the amount computed in **B.1.** above by the limit of liability for greenhouse (hothouse) glass declared above; or

C. The actual cost to repair or replace the broken or destroyed greenhouse (hothouse) glass.

Also, if greenhouse (hothouse) glass is covered by other insurance, we will pay no more than the proportion of loss that our limit of liability for such greenhouse (hothouse) glass bears to the total amount of insurance covering that glass".

D. Premium

Refer to the state rates.

RULE 513.
WATER BACK UP AND SUMP OVERFLOW

Rule **513.** does not apply.

RULE 515.
MOTORIZED GOLF CART – PHYSICAL LOSS COVERAGE

Rule **515.** does not apply.

RULE 517.
LIMITED FUNGI, WET OR DRY ROT, OR BACTERIA COVERAGE

Rule **517.** does not apply.

ADDITIONAL RULE(S)

RULE A3.
WINDSTORM OR HAIL EXCLUSION – TERRITORIES 05, 06, 42 AND 43 ONLY

Territories 05, 06	
Building Credit	$ 149
Contents Credit	20
Territories 42, 43	
Building Credit	$ 78
Contents Credit	11

Table A3.B.2.(R) Windstorm Or Hail Exclusion – Territories 05, 06, 42 And 43 Only

RULE A5.
INSTALLMENT PAYMENT PLAN

C. The additional charge per installment is $3.00.

RULE A6.
UNPROTECTED DWELLINGS – PROTECTION CLASS 9, 9E, 9S OR 10

Rates Per $1,000	
Additional rate of insurance	$ 1.50

Table A6.C.1.a.(R) Unprotected Dwellings – Protection Class 9, 9E, 9S Or 10

RULE 206.
MINIMUM PREMIUM

D. Minimum Premium – $50.

RULE 208.
WAIVER OF PREMIUM

B. Amount that may be waived – $3 or less.

RULE 301.
BASE PREMIUM COMPUTATION

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 05, 06, 32				
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 05**	**Territory 06**	**Territory 32**
1-4	M	$ 13	$ 14	$ 32
	F	21	23	50
5-6	M	17	17	40
	F	23	25	56
7	M	19	21	46
	F	25	28	63
8	M	21	24	53
	F	29	31	71
9, 9e, 9s	M	42	45	102
	F	56	61	139
10	M	69	74	168
	F	85	91	206

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#1(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Owner-Occupied And Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage A**	**Limit Of Liability (000's)**	**Coverage A**
$ 1∗	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	.04
26	1.44		

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#2(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 34, 36, 38				
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 34**	**Territory 36**	**Territory 38**
1-4	M	$ 32	$ 32	$ 32
	F	51	50	48
5-6	M	41	40	40
	F	55	55	54
7	M	46	45	45
	F	62	62	61
8	M	52	51	52
	F	72	70	68
9, 9e, 9s	M	101	100	99
	F	138	137	134
10	M	166	164	163
	F	204	202	199

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#3(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Owner-Occupied And Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage A**	**Limit Of Liability (000's)**	**Coverage A**
$ 1∗	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	.04
26	1.44		

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#4(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 39, 41, 42				
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	Const.*	Territory 39	Territory 41	Territory 42
1-4	M	$ 25	$ 37	$ 22
	F	40	59	36
5-6	M	32	48	28
	F	43	64	39
7	M	36	53	33
	F	50	72	44
8	M	41	60	37
	F	56	82	51
9, 9e, 9s	M	81	118	72
	F	109	160	97
10	M	132	193	117
	F	161	236	144

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#5(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	.04
26	1.44		

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#6(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 43, 44, 45				
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 43**	**Territory 44**	**Territory 45**
1-4	M	$ 22	$ 24	$ 29
	F	37	38	46
5-6	M	29	32	38
	F	39	42	50
7	M	34	35	43
	F	45	46	58
8	M	37	40	48
	F	52	54	65
9, 9e, 9s	M	73	77	95
	F	99	104	127
10	M	120	126	153
	F	147	154	189

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#7(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage A**	**Limit Of Liability (000's)**	**Coverage A**
$ 1∗	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	
26	1.44		.04

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#8(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 46, 47, 53				
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	Const.∗	Territory 46	Territory 47	Territory 53
1-4	M	$ 29	$ 29	$ 24
	F	46	46	37
5-6	M	38	38	30
	F	50	50	41
7	M	43	43	34
	F	58	58	45
8	M	48	48	39
	F	65	65	52
9, 9e, 9s	M	95	95	75
	F	127	127	100
10	M	153	153	122
	F	189	189	150

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#9(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1∗	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	.04
26	1.44		

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#10(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 57, 60			
Fire – Coverage A – All Forms – Non-Seasonal And Seasonal			
Protection Class	Const.*	1-5 Families	
		Territory 57	Territory 60
1-4	M	$ 28	$ 22
	F	44	35
5-6	M	35	28
	F	48	38
7	M	41	31
	F	54	42
8	M	46	36
	F	62	49
9, 9e, 9s	M	89	69
	F	121	94
10	M	145	114
	F	178	140

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#11(R) Fire – Coverage A – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Additional $1,000	.04
26	1.44		

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#12(R) Fire – Coverage A – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 05, 06, 32				
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	Const.∗	Territory 05	Territory 06	Territory 32
1-4	M	$ 6	$ 6	$ 16
	F	7	8	19
5-6	M	7	7	18
	F	8	8	22
7	M	8	8	20
	F	9	9	23
8	M	8	8	22
	F	11	11	28
9, 9e, 9s	M	15	15	36
	F	18	18	46
10	M	21	21	53
	F	25	25	64

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#13(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Owner-Occupied And Non-Owner Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	
26	3.60		.13

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#14(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 34, 36, 38				
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 34**	**Territory 36**	**Territory 38**
1-4	M	$ 14	$ 14	$ 13
	F	18	18	17
5-6	M	17	18	16
	F	20	20	18
7	M	19	19	18
	F	22	23	20
8	M	20	20	18
	F	26	26	24
9, 9e, 9s	M	35	35	31
	F	43	44	40
10	M	50	50	46
	F	61	61	55

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#15(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Owner-Occupied And Non-Owner-Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	
26	3.60		.13

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#16(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 39, 41, 42				
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 39**	**Territory 41**	**Territory 42**
1-4	M	$ 13	$ 16	$ 12
	F	16	20	14
5-6	M	15	19	14
	F	17	22	15
7	M	16	20	14
	F	20	24	17
8	M	17	22	15
	F	22	29	20
9, 9e, 9s	M	30	37	26
	F	37	47	33
10	M	43	54	39
	F	52	66	46

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#17(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	
26	3.60		.13

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#18(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 43, 44, 45				
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	**Const.∗**	**Territory 43**	**Territory 44**	**Territory 45**
1-4	M	$ 11	$ 12	$ 14
	F	14	15	17
5-6	M	14	14	16
	F	15	17	19
7	M	14	17	18
	F	17	19	21
8	M	15	17	19
	F	20	21	24
9, 9e, 9s	M	26	29	33
	F	33	36	42
10	M	38	41	47
	F	46	50	58

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#19(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	
26	3.60		.13

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#20(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 46, 47, 53				
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal				
		1-5 Families		
Protection Class	Const.∗	Territory 46	Territory 47	Territory 53
1-4	M	$ 13	$ 14	$ 12
	F	17	17	13
5-6	M	16	16	13
	F	19	19	15
7	M	18	18	14
	F	21	21	16
8	M	19	19	15
	F	24	24	20
9, 9e, 9s	M	33	33	26
	F	41	42	32
10	M	47	47	38
	F	58	58	46

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#21(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	
26	3.60		.13

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#22(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-Occupied And Non-Owner-Occupied Key Premiums – Territories 57, 60			
Fire – Coverage C – All Forms – Non-Seasonal And Seasonal			
Protection Class	**Const.∗**	**1-5 Families**	
		Territory 57	**Territory 60**
1-4	M	$ 13	$ 10
	F	17	14
5-6	M	16	12
	F	18	15
7	M	18	15
	F	21	16
8	M	18	15
	F	24	19
9, 9e, 9s	M	32	25
	F	40	32
10	M	46	36
	F	56	44

∗ M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#23(R) Fire – Coverage C – All Forms – Non-Seasonal And Seasonal Non-Owner-Occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1∗	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Additional $1,000	.13
26	3.60		

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#24(R) Fire – Coverage C – All Forms Owner And Non-Owner-Occupied – Non-Seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Extended Coverage, Broad And Special Forms – Coverage A Key Premiums*			
	Forms		
Territory	DP 00 01	DP 00 02	DP 00 03
05, 06	$ 171	$ 182	$ 282
32	25	31	41
34	29	36	48
36	16	23	26
38	14	20	23
39	16	23	26
41	43	54	71
42, 43	100	112	165
44	24	34	40
45	40	50	66
46	28	35	46
47	35	44	58
53	25	31	41
57	21	29	35
60	20	28	33

* **DP 00 01** Key Premiums are Non-Seasonal and Seasonal. **DP 00 02** and **DP 00 03** Key Premiums are Non-Seasonal only and include the charge for Extended Coverage and Vandalism and Malicious Mischief perils.

Table 301.A.#25(R) Extended Coverage, Broad And Special Forms – Coverage A Key Premiums

To develop the Seasonal Base Premiums, multiply the following factors by the **DP 00 01** Extended Coverage Base Premiums:

Territory	DP 00 02	DP 00 03
05, 06	1.263	1.65
32, 34, 41, 45-47, 53	1.60	1.65
36, 38, 39, 44, 60	1.60	1.65
42, 43	1.495	1.65
57	1.60	1.65

Table 301.A.#26(R) Extended Coverage, Broad And Special Forms – Coverage A Seasonal Key Premiums Forms DP 00 02 And DP 00 03

Extended Coverage, Broad And Special Forms – Coverage A			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.24	$ 27	1.64
2	.29	28	1.69
3	.34	29	1.74
4	.40	30	1.79
5	.45	31	1.84
6	.51	32	1.89
7	.56	33	1.94
8	.62	34	1.99
9	.67	35	2.04
10	.72	36	2.09
11	.78	37	2.14
12	.83	38	2.19
13	.89	39	2.24
14	.94	40	2.29
15	1.00	41	2.34
16	1.05	42	2.39
17	1.10	43	2.44
18	1.16	44	2.49
19	1.21	45	2.54
20	1.27	46	2.59
21	1.32	47	2.64
22	1.37	48	2.69
23	1.43	49	2.74
24	1.48	50	2.79
25	1.54	Each Additional $1,000	.05
26	1.59		

* Use this limit of liability to develop premiums for policy amounts less than $1,000

Table 301.A.#27(R) Extended Coverage, Broad And Special Forms – Coverage A Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Extended Coverage, Broad And Special Forms – Coverage C Key Premiums∗			
	Forms		
Territory	**DP 00 01**	**DP 00 02**	**DP 00 03**
05, 06	$ 23	$ 25	$ 49
32	2	3	4
34	2	3	4
36	1	2	2
38	1	2	2
39	1	2	2
41	5	7	11
42, 43	14	16	30
44	2	3	4
45	4	5	9
46	2	3	4
47	3	4	6
53	2	3	4
57	1	2	2
60	2	3	4

∗ **DP 00 01** Key Premiums are Non-Seasonal and Seasonal. **DP 00 02** and **DP 00 03** Key Premiums are Non-Seasonal only and include the charge for Extended Coverage and Vandalism and Malicious Mischief perils.

Table 301.A.#28(R) Extended Coverage, Broad And Special Forms – Coverage C Key Premiums

To develop the Seasonal Base Premiums, multiply the following factors by the **DP 00 01** Extended Coverage Base Premiums:

Territory	DP 00 02	DP 00 03
05, 06	1.300	2.15
32, 34, 41, 45-47, 53	2.10	2.15
36, 38, 39, 44, 60	2.10	2.15
42, 43	1.590	2.15
57	2.10	2.15

Table 301.A.#29(R) Extended Coverage, Broad And Special Forms – Coverage C Seasonal Key Premiums Forms DP 00 02 And DP 00 03

Extended Coverage, Broad And Special Forms – Coverage C			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1∗	.17	$ 27	4.51
2	.33	28	4.68
3	.50	29	4.85
4	.67	30	5.02
5	.83	31	5.19
6	1.00	32	5.36
7	1.17	33	5.53
8	1.34	34	5.70
9	1.50	35	5.87
10	1.67	36	6.04
11	1.84	37	6.21
12	2.00	38	6.38
13	2.17	39	6.55
14	2.33	40	6.72
15	2.50	41	6.89
16	2.67	42	7.06
17	2.84	43	7.23
18	3.00	44	7.40
19	3.17	45	7.57
20	3.34	46	7.74
21	3.51	47	7.91
22	3.67	48	8.08
23	3.84	49	8.25
24	4.00	50	8.42
25	4.17	Each Additional $1,000	
26	4.34		.17

∗ Use this limit of liability to develop premiums for policy amounts less than $1,000

Table 301.A.#30(R) Extended Coverage, Broad And Special Forms – Coverage C Key Factors

RULE 302.
VANDALISM AND MALICIOUS MISCHIEF – (DP 00 01)

Rates Per $1,000	
Not Seasonal or Vacant	$ .17
Seasonal and Not Vacant	1.40
Vacant	9.30
In Course of Construction	.19

Table 302.(R) Vandalism And Malicious Mischief (DP 00 01)

RULE 404.
MOBILE OR TRAILER HOMES – (DP 00 01)

Use the One Family, Coverage **A** or **C,** Frame Base Premium.

RULE 406.
DEDUCTIBLES

B. Optional Deductibles

The Minimum Additional Charge is $25.00.

RULE 500.
MISCELLANEOUS LOSS COSTS

Rates Per $1,000*	
Exposure	**Rates**
A. Fire: Protection Class 1-8	$ 2.50
Fire: Protection Class 9, 9E, 9S & 10	4.50
B. Extended Coverage **(DP 00 01)**	1.00
C. Broad Form **(DP 00 02)**	1.50
D. Special Form **(DP 00 03)**	2.00
E. Broad Form **(DP 00 02)** with Endorsement **DP 04 65**	2.00
* These rates apply to all occupancies, territories, construction and protection classifications, unless otherwise specified. Rates for **A.** are cumulative with either **B., C., D.,** or **E.**	

Table 500.(R) Miscellaneous Rates

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

The Additional Rate per $1,000 of insurance is $15.00.

RULE 508.
TREES, SHRUBS AND OTHER PLANTS

C. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

The rates in the following table apply to all occupancies, territories, construction and protection classifications, unless otherwise specified:

Fire (DP 00 01)		
Protection Class	**Rates Per $1,000**	
1 – 8	$ 2.50	
9, 9E, 9S & 10	4.50	
Extended Coverage (DP 00 01) – All Specified Perils		
Territory	**Rates Per $1,000 Including Wind Or Hail**	**Rates Per $1,000 Excluding Wind Or Hail**
05, 06	$ 57.00	$ 1.00
42, 43	29.00	1.00
32, 34, 41, 45 – 47, 53	15.00	1.00
36, 38, 39, 44, 57, 60	13.10	1.00
Windstorm Or Hail (DP 00 02 And DP 00 03)		
Territory	**Rates Per $1,000**	
05, 06	$ 56.00	
42, 43	28.00	
32, 34, 41, 45 – 47, 53	14.00	
36, 38, 39, 44, 57, 60	12.10	

Table 508.C.1.(R) Premium Computation

RULE 509.
EARTHQUAKE COVERAGE

D. Premium For Base Deductible

	Zone	Frame*	Masonry*	Superior
Table A				
Coverages **A, B, D** Or **E**	3	$ .36	$ 1.72	$ .68
Improvements, etc.	4	.23	1.05	.39
& Other Building Options	5	.18	.57	.27
Table B				
Coverage **C** & Other	3	$ .36	$ 1.43	$ .36
Personal Property	4	.23	.82	.23
Options	5	.18	.57	.18
* If exterior Masonry Veneer is covered, rate as Masonry; if not covered – rate as Frame.				

Zone Definitions		
Zone 3		
Anson	Davie	Richmond
Brunswick	Gaston	Robeson
Cabarrus	Iredell	Rowan
Catawba	Lincoln	Scotland
Cleveland	Mecklenburg	Stanly
Columbus	Montgomery	Union
Zone 4		
Alexander	Forsyth	Pender
Alleghany	Graham	Polk
Ashe	Haywood	Randolph
Avery	Henderson	Rutherford
Bladen	Hoke	Surry
Buncombe	Jackson	Swain
Burke	Macon	Transylvania
Caldwell	Madison	Watauga
Cherokee	McDowell	Wilkes
Clay	Mitchell	Yadkin
Cumberland	Moore	Yancey
Davidson	New Hanover	
Zone 5		
Balance of State		

Table 509.D.1.(R) Premium For Base Deductible 5% Deductible

RULE 511.
SINKHOLE COLLAPSE COVERAGE

Rates Per $1,000	
Cov. **A** or **B** and Other Bldg. Options	$ .30
Cov. **C** or Personal Property Options	.10

Table 511.B.1.(R) Premium Computation

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES

Rates Per $1,000				
	Territories			
	05, 06	42, 43	32, 34, 41, 45 – 47, 53	36, 38, 39, 44, 57, 60
1. Signs				
All Metal	$ 33.60	$ 16.80	$ 12.10	$ 11.20
Other Construction	112.00	56.00	44.30	38.70
2. Cloth Awnings	56.00	28.00	14.00	12.10
3. Radio Or Television Equipment	112.00	56.00	44.30	32.70
4. Swimming Pools – Construction Of Pool And Related Structures*				
Masonry, Uncovered	.94	.47	.37	.28
Masonry, With Combustible Superstructures (Including Roof) And/Or Fencing – Pool Only	.94	.47	.37	.28
Masonry, With Combustible Superstructures (Including Roof) And/Or Fencing – Superstructure And/Or Fencing	32.60	16.30	11.20	8.40
Other Construction With Or Without Roof	32.60	16.30	11.20	8.40
Inflated Enclosure Or Covering Of Plastic Material	168.00	84.00	65.30	56.00
5. Screens (Including Supports)	32.60	16.30	11.20	8.40
6. Fences And Walls				
Masonry, Iron Or Reinforced Concrete	2.80	1.40	1.12	1.03
Other Construction	56.00	28.00	14.00	12.10
7. Bathhouses, Cabanas, Pergolas, Slathouses, Trellises; Structures Over Water				
Masonry	4.67	2.33	1.49	1.31
Other Construction – Fully Enclosed	6.53	3.27	1.96	1.68
Other Construction – Not Fully Enclosed	17.72	8.86	7.00	6.53
8. Outdoor Equipment	4.80	2.40	2.12	2.03
9. Greenhouses Or Hothouses				
Structures Including Glass, Flowers And Plants	130.60	65.30	61.10	60.60
If insured separately: Structure	11.56	5.78	4.67	4.48
Glass	66.20	33.10	31.30	30.80
Flowers And Plants	87.80	43.90	40.60	40.10
* If any part of a pool's enclosure or roof is made of plastic film or cloth, supported on wood framing, the entire pool is subject to the rates displayed for Inflated Enclosure or Covering of Plastic Material.				

Table 512.D.(R) Premium Windstorm Or Hail Coverage – Miscellaneous Properties

RULE 514.
ASSISTED LIVING CARE

C. Premium

For Basic Limits, the rate per unit is $55.38.

For increased Coverage **C** Limit, the rate per $1,000 is $6.38.

1. **TERRITORY DEFINITIONS** – (For all Coverages and Perils Other than Earthquake).

A. Cities

City of	County of	Code
Charlotte	Mecklenburg	38
Durham	Durham	32
Greensboro	Guilford	36
Raleigh	Wake	32
Winston-Salem	Forsyth	36

B. Other Than Cities

County of	Code
Alamance	57
Alexander	60
Alleghany	60
Anson	44
Ashe	60
Avery	60
Beaufort	43
Bertie	45
Bladen	41
Brunswick	42
Buncombe	60
Burke	60
Cabarrus	60
Caldwell	60
Camden	43
Carteret	43
Caswell	46
Catawba	60
Chatham	53
Cherokee	60
Chowan	43
Clay	60
Cleveland	60
Columbus	41
Craven	43
Cumberland	34
Currituck	43
Dare	43
Davidson	57
Davie	60
Duplin	45
Durham	53
Edgecombe	47
Forsyth	57
Franklin	47
Gaston	39
Gates	45
Graham	60
Granville	46
Greene	45
Guilford	57
Halifax	47
Harnett	47
Haywood	60
Henderson	60
Hertford	45
Hoke	47
Hyde	43
Iredell	60
Jackson	60
Johnston	47
Jones	43
Lee	47
Lenoir	45
Lincoln	60
Macon	60
Madison	60
Martin	45
McDowell	60
Mecklenburg	39
Mitchell	60
Montgomery	44
Moore	47
Nash	47
New Hanover	42
Northampton	47
Onslow	42
Orange	53
Pamlico	43
Pasquotank	43
Pender	42
Perquimans	43
Person	46
Pitt	45
Polk	60
Randolph	57
Richmond	44
Robeson	41
Rockingham	60
Rowan	60
Rutherford	60
Sampson	45
Scotland	47
Stanly	60
Stokes	60
Surry	60
Swain	60
Transylvania	60
Tyrrell	43
Union	39
Vance	46
Wake	53
Warren	46
Washington	43
Watauga	60
Wayne	45
Wilkes	60
Wilson	47
Yadkin	57
Yancey	60

Beach Area – Localities south and east of the Inland Waterway from the South Carolina Line to Fort Macon (Beaufort Inlet), thence south and east of Core, Pamlico, Roanoke and Currituck Sounds to the Virginia Line, being those portions of land generally known as the "Outer Bank".

Beach Areas in Carteret, Currituck, Dare and Hyde counties:	05
Beach areas in Brunswick, New Hanover, Onslow and Pender counties:	06

PREFILED TESTIMONY
OF
ROBERT J. CURRY

2011 DWELLING FIRE AND EXTENDED COVERAGE INSURANCE
FILING BY THE
NORTH CAROLINA RATE BUREAU

Q. Please state your name and business address.

A. My name is Robert J. Curry. My business address is Insurance Services Office, 545 Washington Boulevard, Jersey City, New Jersey.

Q. By whom are you employed?

A. I am employed by Insurance Services Office (ISO) and have been employed by ISO since October 8, 1984.

Q. What are your responsibilities at ISO?

A. I am generally responsible for managing and overseeing the operations of the Personal Property Actuarial Division at ISO. The Personal Property Actuarial Division is responsible for ISO's total ratemaking operation as it pertains to personal property insurance, including homeowners, dwelling and inland marine coverages. We are generally responsible for doing analyses that pertain to ratemaking for the personal property coverages including reviewing experience, making filings, analysis of classification plans, etc. ISO is involved in ratemaking for the personal property coverages in general in all of the 50 states plus the District of Columbia and Puerto Rico.

Q. What is your employment background?

A. I have been employed by ISO for over twenty-five years in various actuarial positions. I was hired as an Actuarial Assistant in 1984 in the Data Management and Control area. In 1990, I joined Actuarial Development as an Actuarial Consultant coordinating work on the quarterly Industry Operating Results and several Insurance Issues Series studies. In 1994, I joined Actuarial Government Services as a Regional Actuary. In 1998, I joined the Personal Lines Actuarial

Division (PLAD) as a Manager and Associate Actuary. In PLAD, I was responsible for personal auto filings in 25 states and the use of catastrophe models in personal property ratemaking. In 2003 I was appointed Assistant Vice President and Actuary of the Personal Property Actuarial Division.

Q. What is your background in actuarial science and your educational background?

A. I have a Bachelor of Science degree in mathematics from Cook College at Rutgers University. I am a Fellow of the Casualty Actuarial Society (CAS) and a member of the American Academy of Actuaries (AAA). I have met the continuing professional education requirements of the AAA for 2010 and 2011. I am a Chartered Property Casualty Underwriter (CPCU). I have also earned the Associate in Insurance Accounting and Finance (AIAF) and Associate in Regulatory Compliance (ARC) designations. I am currently a member of the CAS Ratemaking and Product Management Seminar Committee and the CAS Trust Scholarship Committee. I have served on the CAS Examination Committee, CAS Committee on Special Interest Seminars, CAS Continuing Education Committee and CAS Syllabus Committee. I was the chairman of the CAS Predictive Modeling Seminar Committee. I have also served as a member of the American Academy of Actuaries Committee on Automobile Insurance Issues.

Q. Are you familiar with dwelling fire and extended coverage ratemaking in other states?

A. Yes. As part of my duties at ISO, I am familiar with the data collection and ratemaking procedures in use in states in addition to North Carolina. I am responsible at the present time for either preparing or supervising the preparation of filings for all of the states and the District of Columbia and Puerto Rico.

Q. What work have you performed with respect to the Rate Bureau's 2011 dwelling fire and extended coverage rate filing in North Carolina?

A. Through ISO I have been involved in the preparation of the 2011 dwelling rate and territory definition filing for the Rate Bureau in two respects. First, ISO, as a licensed statistical agent in North Carolina, collects data from a significant number of insurers that write dwelling fire and extended coverage insurance in North Carolina, as well as the North Carolina Insurance Underwriting Association (commonly called the "Beach Plan") and the North Carolina Joint Underwriting Association (commonly called the "FAIR Plan") which are residual market mechanisms[1]. The Independent Statistical Service (ISS), the American Association of Insurance Services (AAIS) and the National Independent Statistical Service (NISS) are the licensed statistical organizations which collect data from the other companies.

The ratemaking experience reflected in Exhibit RB-1 is, in general, supplied by the individual insurance companies. The data are submitted to one of the four statistical organizations (ISO, AAIS, NISS or ISS). The four statistical organizations subject the data that are reported to them to a series of verification edits and then consolidate the data. The ISS, the NISS and the AAIS then transmit their consolidated data to ISO for a

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[1] There are two residual market mechanisms for residential property insurance in North Carolina. They were created by the legislature and are governed by two different articles in the North Carolina insurance statutes. Residual market mechanisms provide insurance policies for persons who cannot obtain policies in the voluntary market. Although voluntary companies have chosen not to accept the risk of writing those policies at the rates that can be charged to those persons, North Carolina law holds those same voluntary companies ultimately responsible in whole or in part for payment of the losses that occur under those polices. The two residual market mechanisms write policies, receive premiums, adjust losses and report statistics to statistical agents in the same manner as voluntary insurance companies. They use forms and rates filed by the Rate Bureau for dwelling fire and extended coverage policies.

Article 45 of the insurance statutes sets up the "North Carolina Insurance Underwriting Association" which governs what is now called the Coastal Property Insurance Pool. This pool writes policies at the beach and coastal areas of the state. Since this residual market plan has commonly been called the "Beach Plan" throughout its history, that term is employed in my testimony and in the filing for the sake of convenience.

The other residual market mechanism is the "FAIR Plan" which was set up by Article 46 of the insurance statutes. This plan offers policies in areas of the state other than the beach areas. This plan created and operates a pool called the North Carolina Joint Underwriting Association. Since this residual market plan has commonly been called the "FAIR Plan" throughout its history, that term is employed in my testimony and in the filing for the sake of convenience.

further consolidation with the ISO data. After consolidating the data, ISO produces the hard-copy exhibits of the combined data in a format and detail necessary for ratemaking.

ISO and other statistical agents collect, compile and maintain the data underlying this filing as a regular practice and in the regular course of their business responsibilities as licensed statistical agents in all other states.

Second, ISO provides consulting actuarial services directly to the Rate Bureau. I have been directly involved in this aspect of the Rate Bureau's dwelling insurance rate filings for a number of years. As in the past, my staff and I compiled the ratemaking data to be reviewed by the Property Rating Subcommittee, the Property Committee and the Governing Committee in preparation of the filing.

Under my direction, my staff put together the vast majority of the data, information and calculations contained in Exhibit RB-1. This lengthy process was performed throughout the year 2010 under the ultimate direction of the Bureau committees.

Finally, I have reviewed the filed rates and territory definitions to determine if they are calculated in accordance with the Casualty Actuarial Society's (CAS) Statement of Principles Regarding Property and Casualty Insurance Ratemaking. In accordance with Actuarial Standard of Practice No. 17 Expert Testimony by Actuaries, I conducted my review in terms of reasonableness rather than solely in terms of whether there is precise agreement on each issue. In addition, I applied the rate standards set forth in North Carolina General Statute 58-36-10, i.e., that rates must not be excessive, inadequate or unfairly discriminatory and that certain statutory rating factors must be considered.

Q. What data are utilized in Exhibit RB-1?

A. With respect to Exhibit RB-1 the supporting data for the rate level changes for dwelling fire and extended coverage are contained in Section C. Five years of premium and loss experience are displayed in Section C. The five years are the years ended December 31, 2003 through December 31, 2007..

The loss experience used in the filing is what we call "accident year" experience. I can explain that best by giving you an example. The losses for the accident year ended December 31, 2007 consist of all losses caused by claims that occurred during the one year period ended December 31, 2007. If a claim occurred December 29, 2007 and resulted in either a loss being paid or a reserve being established even after January 1, 2008, that loss would be a part of the accident year losses for the period ended December 31, 2007. The test for breaking losses down into accident years is the date the claim occurred.

Q. What is the reason for using five years of premium and loss data to determine the indicated rate level change?

A. Five years of data are used to balance the stability of the rates with responsiveness to current conditions. The North Carolina statutes allow the Rate Bureau to consider five years of experience in its property rate level filings in addition to other factors that are to be considered. Furthermore, traditional fire insurance ratemaking has relied on five years of experience with the weights of .10, .15, .20, .25 and .30 being given to each year respectively as the way to achieve this balance. The accident year weights used by the Bureau are identical to those used by Insurance Services Office in developing their advisory loss costs for dwelling fire insurance. These weights are generally accepted in all jurisdictions in which ISO makes dwelling fire and extended coverage filings. For dwelling extended coverage insurance, because it is by nature more likely to be unstable, equal weights are given to each year for stability. This treatment is a common and accepted ratemaking practice used by ISO countrywide.

Q. Mr. Curry, please turn to page C-1 of Exhibit RB-1. Would you explain what that page represents.

A. Page C-1 is what we call a statewide rate level calculation for dwelling fire. Page C-1 is a determination of what the actual indicated rate level change is for dwelling fire. The data shown are for all business written in the voluntary market and the data written by the North Carolina Beach and FAIR Plans.

Q. Referring to column 1 on page C-1, what are "Adjusted Incurred Losses"?

A. The incurred losses in column 1 are the losses from all causes from claims that occurred during each of the respective accident years. The figure includes losses that have already been paid, losses that are not yet paid and are represented by outstanding claim reserves, and losses that have been incurred but for which no individual reserve exists because they have not yet been reported.

Q. Have the losses as shown in column 1 been adjusted in any way?

A. Yes, there are two adjustments. First, these losses have been adjusted to a common $250 deductible level. The second adjustment results from the use of a loss development factor.

Q. What is the purpose of adjusting the reported losses by applying a loss development factor?

A. As I mentioned a moment ago, the losses in column 1 of page C-1 include losses that are not yet reported. By definition, since they are not yet reported, we cannot simply take a reported number and add it to the losses. They are included by what is known as an adjustment for IBNR (incurred but not reported) losses. This is accomplished through the use of loss development factors. The losses as they are reported to us cover all claims that occur during the respective accident years ended December 31. When they are reported to the statistical agent they are evaluated as of March 31 of the next year. As of March 31 some of the losses have already been paid and some have not. Those that have not are represented by loss reserves. The loss reserves, of course, are estimates of what will ultimately be paid on these outstanding claims. Since we want the estimates to be as accurate as possible, we look at history to see how losses have changed, or "developed," in the past from the time they were initially reported to the time they were ultimately paid. For example, if we look back and see that historically there has been a 1% increase in the amount of losses from the time they were initially reported as reserves until the time they were ultimately paid, we would logically assume that the same development pattern will hold true for losses incurred during the year ended December 31, 2007. Accordingly we would make an adjustment by increasing the losses as they are initially reported to us by 1%.

Q. What causes losses to change or develop as you have described?

A. The losses that are paid as of the date of the initial reporting, of course, do not change. As to the reserve portion of the losses, however, changes would typically result from the fact that the ultimate loss payments are more or less than estimated at the time of the initial report. Another factor would be the late reporting of claims. For example, if a claim occurred on December 25 of any given year and for some reason was not timely reported to the company, it might very well be that the losses as initially reported would not include any provision for that particular claim. By the time of the next year's evaluation, however, the claim would have worked its way into the system and the total loss would include either the paid amount or the reserved amount for that particular claim. This would cause an upward development in the losses as initially reported.

Q. Will you please refer to page D-12 of RB-1 and explain how the loss development factors used in the filing were calculated?

A. Yes. In the top section of that page, the North Carolina incurred losses evaluated as of 15, 27, 39, 51, 63, 75 and 87 months for the accident years for which data are available are shown. In calculating loss development factors, we have used the data of companies reporting to ISO. The first entry for the accident year ended December 31, 1996 is $7,915,525. This is in the column that is labeled "15 Months." This is the first evaluation of the losses caused by claims that occurred during the year that ended December 31, 1996. The evaluation was made as of March 31, 1997 -- 15 months after the beginning of the accident year. Twelve months later (March 31, 1998) the losses caused by claims that occurred during the year ended December 31, 1996 had increased to $7,958,045. This is the evaluation as of 27 months after the beginning of the accident year. This increase represents an increase in losses, or a positive development, of 0.5% (1.005) as shown in the column on that page labeled "27:15." As shown on page D-12, we have looked at the development from 15 months to 27 months for eleven different years. The average development for those years was .993, or -0.7%.

Q. Does page D-12 also show development figures for periods later than 27 months?

A. Yes. Studies have shown that for dwelling fire virtually all losses have been paid by the time of the evaluation at 87 months after the beginning of an accident year. We calculate loss development factors for the periods from 27 months to 39 months, 39 months to 51 months, 51 months to 63 months, 63 months to 75 months and 75 months to 87 months. For example, by the time of the 39 month evaluation the losses for the accident year ended December 31, 1996 had become 8,022,075. This represents an increase of 1.008, or +0.8%, over the losses for the same accident year evaluated as of 27 months. The average development over the period 27 months to 39 months for the ten most recent years for which the data are available was 0.998, or -0.2%.

Q. Will you explain how the loss development factor used to determine the ultimate payment value of the accident year ended December 31, 2007 losses was determined?

A. Yes. The development factors for each of the applicable periods, as shown on page D-12, are:

Development Period	Factor
15 to 27	0.993
27 to 39	0.998
39 to 51	0.999
51 to 63	1.000
63 to 75	0.999
75 to 87	1.001

If you multiply all of these factors you will get a factor of .990 to apply to the year ended December 31, 2007 losses.

Q. What other adjustments must be made to the losses?

A. The losses need to be adjusted by trend to reflect the cost levels anticipated to prevail during the period that the proposed rates are expected to be in effect. For this filing the assumed effective date is June 1, 2011. This date is relevant for trending purposes as is explained in my testimony.

Q. Could you please describe how the loss trend is developed and applied?

A. The loss trend is developed in a two step process. The first step is the development of a current cost factor that brings the losses up to the cost level of the external Current Cost Index that is used as the basis of the loss trend. The second step is the development of a loss projection factor based upon an exponential fit of the last twelve quarters of the Current Cost Index and the actual dwelling pure premium trend. The loss projection factor projects the losses from November 15, 2009 (the midpoint of the latest quarter of the external index) to June 1, 2012, the average date of loss for one year policies which are assumed to be written at the proposed rates (i.e. one year beyond the assumed effective date of June 1, 2011).

Q. You mentioned that the loss trend is based on a Current Cost Index. What are the components of the Current Cost Index used for dwelling fire?

A. The Current Cost Index is a weighted average of the Modified Consumer Price Index (MCPI) and the Boeckh Residential Index (BRI), with the MCPI receiving 20% weight and the BRI receiving 80% weight. The intent of the weights is to reflect the split between contents type losses and buildings type losses.

Q. How are the weights of 80% to the Boeckh Residential Index and 20% to the Modified Consumer Price Index determined?

A. The weights were based on an examination of fire losses, apportioning the losses between buildings and contents.

Q. What is the Boeckh Residential Index?

A. The Boeckh Residential Index is an index of construction costs compiled by Marshall & Swift/Boeckh. The particular index used in this filing is based on information compiled specifically for construction costs in North Carolina.

Q. What is the Modified Consumer Price Index?

A. The Modified Consumer Price Index is based on selected components of the Consumer Price Index that correspond to the items that dwelling fire and extended coverage insurance covers. The components used and the weights given to them are House Furnishings (70%), Apparel Commodities (20%) and Entertainment Commodities (10%).

Q. Please illustrate what factors would be applied to trend the losses for the year ended December 31, 2007.

A. The losses from the accident year ended December 31, 2007 are first adjusted by the Current Cost Factor for

2007 of 1.023 which is found on page D-14. The Current Cost Factor is the ratio of the Current Cost Index from the quarter ending December 30, 2009 to the Current Cost Index value for the full year 2007. The Current Cost Factor brings the losses from the cost levels corresponding to an average date of loss of June 30, 2007 to the cost levels corresponding to the midpoint of the latest quarter (November 15, 2009) of the Current Cost Index. Since the average date of loss for policies that will be written at the proposed rates is June 1, 2012 (one year past the assumed effective date) it is necessary to project the losses from the November 15, 2009 cost level to that date. This is accomplished by projecting the losses at the annual rate of change of 3.5% for 30.5 months. This loss projection factor of 1.091 is calculated on page D-15.

Q. You mentioned that the actual pure premium trend was considered in the selection of trend factors. How was this data used?

A. The pure premium experience was examined. A pure premium is the ratio of the losses to the number of insured house years. These data were fit to an exponential curve and an annual rate of change was calculated. This rate of change was compared to the annual rate of change of the Current Cost Index. In reviewing the loss trends, the annual rates of change in dwelling fire and extended coverage pure-premium during the 2003-2007 experience period are higher than the observed annual changes in the external indices. Therefore, to project losses to a 2012 level, a 2% additional annual trend adjustment was selected by the Property Rating Subcommittee for both dwelling fire and extended coverage. This results in the 3.5% annual rate of change used to trend the prospective losses.

Q. Where on page C-1 are these factors applied?

A. The Current Cost Factor for each year is applied as part of the current cost/current amount factor in column 3. For example, for the year ended December 31, 2007 the current cost/current amount factor of 0.942 is the ratio of the current cost factor of 1.023 (shown on page D-18) and the current amount factor of 1.086 (shown on page D-18). The loss projection factor is combined with the premium projection factor and the trend from first dollar to produce the composite projection factor. This composite projection factor is applied in column 5 in the development of the Trended Loss Cost.

Q. You mentioned the trend from first dollar. Could you describe what that is and how it is developed and applied?

A. The index is a first dollar index. All of the losses have been adjusted to a $250 deductible level. As such, increases in cost as measured by the current cost index would affect losses below the deductible and cause an additional increase as losses below the deductible increase above it. For example, a loss of $1,000 subject to a $250 deductible results in a payment of $750 to the insured. If there is 10% inflation the $1,000 loss grows to $1,100. This results in a payment to the insured of $850, which is a resulting effective inflation of 13.3%, an incremental trend of 3%. The procedure used in the filing is a standard one that accounts for this effect. The procedure in essence converts all the losses to a first dollar basis before the trend factor is applied. To obtain the resulting trended losses, the deductible portion of the trended losses are subtracted out. The trend from first dollar factor as shown on page D-19 is the incremental difference in the trend factor resulting from the application of our procedure. Using our example from before, and the formula for trend from first dollar on page D-19 results in a trend from first dollar factor of $1 + (((.1)\ (250))/((1.1)(750))) = 1.03$, which matches what was calculated earlier.

Q. Please refer to column 2 of page C-1. With reference to the column headed "Adjusted Incurred Losses Including LAE," please tell us what the figure $42,835,770 represents.

A. These are the losses and loss adjustment expenses associated with claims that occurred in the accident year ended December 31, 2007. The losses are the sum of the adjusted incurred losses in column 2, adjusted by a trended loss adjustment expense factor of 1.08.

Q. How is the trended loss adjustment expense factor of 1.08 developed?

A. Each year the Rate Bureau sends a call to its member companies for expense-related data. These calls showed that loss adjustment expenses for the calendar years December 31, 2003, December 31, 2004, December 31, 2005, December 31, 2006 and December 31, 2007, after dropping the high and low values, averaged 8.2% for the period as shown on page D-26.

This factor of 8.2% must be adjusted for the change in cost levels of the items that go into loss adjustment expenses. These expenses include items like adjuster's salaries, rents and overhead items related to claims settlement. In essence, these items will not change as losses change but rather will vary as general economic trends vary. We adjust the loss adjustment expense factor by taking a ratio of the expense trend to the loss trend on page D-29. This adjustment results in trended loss adjustment factor of 1.08.

Q. Could you please explain how the expense trend used to adjust the loss adjustment expense factor is developed?

A. The expense trend used to adjust the loss adjustment expense factor is based on an analysis of the Current Expense Index, which is an index based on a 50/50 weighting of the all items CPI and the Compensation Cost Index for marine, fire and casualty insurance. The data for this index, which were the latest available when the selection was made, are shown on pages D-23 and D-24. Based on an analysis of this data, an annual rate of change of 2.5% was selected by the Property Rating Subcommittee.

Q. Please explain the development and application of the expense projection factor in adjusting the loss adjustment expense factor?

A. The five year (excluding the high and low values) average loss adjustment expense factor of 8.2% reflects an averaging of the five years 2003, 2004, 2005, 2006 and 2007. As such the factor is representative of the time period corresponding to 2005.

The expense projection factor uses the 2.5% annual rate of change based on an exponential curve of the Current Expense Index. Since the loss adjustment expense ratio is at the cost level corresponding to July 1, 2005, it is necessary to project this cost to the average date of claim for the period which our rates are proposed to be effective, June 1, 2012 (one year beyond our assumed effective date). This calculation is displayed on line (2) on page D-29.

Q. What other adjustments must be made to the loss adjustment expense factor in order to use it?

A. The loss adjustment expense factor is determined as the ratio of expenses to losses. Having adjusted the expense portion of the factor in the numerator, we need to adjust the losses in the denominator by the loss trend, to reflect both the current cost factor and the loss projection factor.

Q. Could you please describe what is being done in Column 3 of page C-1?

A. In Column 3 the previously described current cost factors and current amount of insurance factors are combined into the current cost/current amount factors. This is done by taking the ratio of the current cost factor to the current amount factor. For example, the current cost/current amount factor of 0.942 for 2007 is the ratio of the 2007 current cost factor of 1.023 to the 2007 current amount factor of 1.086. Through these steps the losses and premiums have been brought to the cost level of November 15, 2009.

Q. Please describe the development of the current amount factor.

A. The current amount factor is calculated, separately for buildings and contents, by taking the ratio of the average policy size relativity for each year to the projected average policy size relativity as of November 15, 2009, the same projection date as is used for the losses in the development of the current cost factor. The average policy size relativity is calculated by taking a weighted average of the policy size relativity curve for each amount of insurance using the exposures for each amount of insurance as weights. By taking the ratio of these relativities for each year to the November 15, 2009 value, we are in effect measuring the percentage growth in the premiums at present rates from year to year caused by changes in amount of insurance. These changes in average amounts of insurance are not based on a consistent set of insureds, since some of the growth is due to the addition of new homes. For this reason, a selection of an annual growth rate of 3% was made by the Property Rating Subcommittee. Since the average relativity differs for buildings and contents and is forecasted separately, the resulting current amount factors for buildings and contents are weighed on a premium distribution to produce a combined current amount factor.

Q. How is the current amount factor used in the calculation of the indicated rate level change?

A. The current amount factor for each year is the denominator in the current cost/current amount factor for that year shown in column 3 of page C-1. The premium projection factor is the denominator in the composite projection factor (CPF) used in column 5 of page C-1. The combined effect of these two factors is to bring the average rating factor to the level for the amount of insurance expected to prevail during the period for which these rates are expected to be in use. For example for 2007 the current cost factor is 1.086 and the current amount factor is 1.023. The ratio of these two factors results in a current cost/current amount factor of 0.942 which appears in column 3 on page C-1 in the 2007 row.

Q. Could you please describe what is being done in column 5 of page C-1?

A. Column 5 combines all of the elements in columns 1 through 4. In column 5, the losses and loss adjustment expenses are trended to the cost level expected to prevail during the period in which it is assumed that the policies written at proposed rates will be providing coverage (average date of claim of June 1, 2012). The house years are also projected to reflect the anticipated amounts of insurance for business written between June 1, 2011 and May 31, 2012. As an example the calculation of Column 5 for 2007 is:

(1) Adjusted Incurred Losses Including LAE (C-1, Col 2)

42,835,770

(2) Current Cost/Amount Factor (C-1, Col.3 from page D-18)

0.942

(3) Earned House Years (C-1, Col. 4)

570,959

(4) Composite Projection Factor (D-19, line 18)

1.032

(5) Trended Loss Cost (C-1, Col. 5) (1)*(2)*(4)/(3)

72.93

Q. Please describe the development of the premium projection factor.

A. As I mentioned earlier, for each year we have an average policy size relativity that is calculated as a weighted average of each amount of insurance relativity. The premium projection factor is calculated by fitting an exponential curve to the average policy size relativities. This curve is used to develop an annual rate of change for the policy size relativities. In the case of dwelling fire buildings the average annual rate of change is 3.0% as shown on page D-17. Since the current amount factor has been calculated as the value on November 15, 2009, the premium projection factor will be calculated as the expected growth from November 15, 2009 to December 1, 2011 (which is six months after the assumed effective date of June 1, 2011). This date of December 1, 2011 represents the midpoint of the year in which it is assumed that policies will be written using the proposed rates. This results in a Premium Projection Factor of 1.062 that is shown on Page D-17. A similar calculation is done for fire contents and this produces a Premium Projection Factor of 1.029. The two factors are weighed together to produce the Premium Projection Factor of 1.060. This is shown on Page D-19.

Q. Could you please explain column 6 on page C-1?

A. Column 6 is the average rating factor for the policies purchased in each year. The average rating factor is the ratio of the average rate at manual level to the average current base rate. For example, let's assume that the current territory base rate for frame construction with $75,000 buildings coverage is $100, that the rating factor for masonry is 0.9 and that the rating factor to purchase an additional $25,000 of coverage A is 1.2. Then the average rating factor for a $100,000 masonry policy is calculated as:

$$(100 * 1.2 * 0.9) / 100 = 1.08$$

This factor is needed to adjust the average trended loss costs in column (5) to a base class level. Since most policyholders do not purchase exactly the base amount of coverage, the average trended loss cost is divided by the average rating factor to convert this average trended loss cost into a trended base class loss cost which is shown in column 7.

Q. Could you please explain line 9 on page C-1?

A. Line 9 is the resulting weighted trended base loss cost obtained by applying the accident year weights shown in Column 8 to the trended loss cost for each year shown in Column 7. This weighted trended loss cost is our forecasted base loss cost for policies written during the one-year period after the assumed effective date of June 1, 2011, if there were no change in rate level.

Q. Could you please explain line 10 on page C-1?

A. Line 10 is the credibility of the experience based on the number of house years during the 5 year period. The full credibility standard is based on a procedure considering the frequency of claims and the variability of the size of those claims. The procedure is explained in a CAS Proceedings Paper "Credibility of the Pure Premium" by Mayerson, Jones and Bowers. The full credibility standard is based on a normal distribution with a 90% probability of the pure premium being within 10% of the expected value. The full credibility standard for Fire is 500,000 house years and 330,000 house years for Extended Coverage.

Q. Could you please explain what line 11 entitled "Fixed Expense per Policy" on page C-1 refers to and what it represents?

A. Line 11, "Fixed Expense per Policy" refers to the dollars of prospective premiums that the general expenses will be on policies written between June 1, 2011 and May 31, 2012. General expenses along with other acquisition expenses constitute fixed expenses. They are fixed in that they do not vary as a direct function of the premium dollar. For example, the cost of office equipment, rent and other overhead-type expenses would be among the items classified as either general expenses or other acquisition expenses. Those expenses are fixed in the sense that they do not vary directly as a function of premium. Such things as commissions and premium taxes, on the other hand, are examples of expenses that do rise or fall directly with premium. The number shown on line 11 - $4.53 - represents the dollars of general expenses trended to the levels anticipated to prevail during the period from

June 1, 2011 to May 31, 2012 (the average date of which is December 1, 2011) and the projected premiums for business written during the same period. This is appropriate because general expenses are generally incurred at the time a policy is written.

Q. Could you explain how the figure $4.53 was derived?

A. This derivation of 4.53 is shown on page D-29 in line (4), "Factor to trend expense based on Current Expense Index." It starts out with an untrended general expense ratio of .070 that is based on the average of the 2005, 2006 and 2007 general expense ratios. These are shown on page D-25. The average of these represents the average expense ratio corresponding to 2006. In order to trend these to the cost levels anticipated to prevail between June 1, 2011 and May 30, 2012, we project these by using the Current Expense Index described earlier. This is done by projecting the average annual change of +2.5% over the time period from June 30, 2006 (the average date of the experience on which the general expense ratio is based) to December 1, 2011 (the average date of writing under the proposed rates). Since this ratio is relative to premium, we must project the amount of insurance from 2006 levels to the level anticipated on business written between June 1, 2011 and May 31, 2012. This is done by using the current amount factor for 2006 of 1.145 and the premium projection factor of 1.06. The result is:

$$\frac{0.07 \times 1.143}{1.145 \times 1.06} = .066.$$

A similar calculation is show on line 5 on page D-29 for other acquisition expenses.

Q. What does Line 12 on page C-1 entitled "Loss & Fixed Expenses" show?

A. Line 12 is a combination of the trended base class loss cost and the trended general expenses and other acquisition expenses. The figure $21.29 is the dollar amount that is required to cover the portion of the insurance base rate that covers losses, loss adjustment expenses, general expenses and other acquisition expenses.

Q. What does line 13 on page C-1 entitled "Expected Loss & Fixed Expense Ratio" show?

A. This line takes into account the other expense items to which I just referred. If you look at page D-25 of the filing, you can see that the commission and brokerage is 15.0% of the premium dollar, and taxes, licenses and fees are 2.9% of the premium dollar. The provision utilized in this filing for underwriting profit for dwelling fire is 9.5%. The underwriting profit provision was selected by the Rate Bureau's committees based on reviewing the profit analysis by Dr. Appel. This filing also contains a 1% margin for contingencies. All those items add up to 28.4%. These items are what are known as variable expenses. They vary in direct proportion with the premium dollar. You know that, out of every dollar of premium you write, 28.4 cents will have to go to pay for these expenses and you are left with only 71.6 cents to pay for losses, loss adjustment expenses and general expenses and other acquisition expenses. The expected loss and fixed expense ratio shows the percentage of the premium dollar you will have available to pay for trended losses, trended loss adjustment expenses and trended general expenses and other acquisition expenses.

Q. What is the source of the percentages on page D-25 with respect to commissions and brokerage and with respect to taxes, licenses, and fees?

A. They were calculated from the North Carolina expense calls for 2005, 2006 and 2007 data undertaken by the North Carolina Rate Bureau.

Q. What is the source of the percentage on page D-25 for contingencies?

A. The Bureau committees selected that factor. A 1% factor has been consistently employed in past Bureau property insurance rate filings. It applies both to fire and to extended coverage. A 1% contingency factor is a standard factor that has been used for many years across the country in property insurance ratemaking. The factor was selected by the Bureau committees based upon recognition of the systematic bias that causes actual underwriting experience to be worse than the provision assumed in the rates. Reasons for this bias are many.

One reason is that property insurance involves many risks, but not all of them are observable in the experience or are adequately recognized in normal ratemaking. An example is the potential for conflagration such as could result from brush fires. The state is particularly at risk for several years following hurricanes that blow down thousands of trees, particularly pine trees in the eastern part of the state. Those trees become the tinder for brush fires. The risk is particularly significant if droughts occur in years subsequent to the hurricane. Widespread brush fires have destroyed many homes in other states and constitute a significant exposure in North Carolina, but that exposure is not reflected in the loss data underlying this filing.

In addition, the writing of property insurance in North Carolina is subject to law changes, court interpretations, jury determinations and judicial determinations that expand losses beyond what was contemplated when the policies were written. For example, under rules of legal construction of insurance policies, ambiguity, although unintended, will result in the courts construing policy provisions in favor of greater coverage than was envisioned by the insurance industry when it drafted the policies. An unexpected ruling as to coverage in one case will then be compounded many times by similar results as to numerous other policyholders.

Further, delay and difficulty in obtaining needed rate increases is a factor. In North Carolina and a very few other states, insurance companies writing property insurance are required to go through rating bureaus in order to achieve needed rate increases. This regulatory system can cause significant delay in obtaining needed rate level increases and differs from states that rely more on competition to set rates. The system in this state requires that data be collected from over a hundred companies writing property insurance and then be aggregated and analyzed prior to making a filing for higher rates on behalf of all companies. Additionally, there can be significant further delays in the setting of hearings and in obtaining regulatory approval before revised rates can be charged and premiums collected.

Q. Would you explain line 14 on page C-1 entitled "Net Base Rate per Policy"?

A. The Net Base Rate per policy is calculated by dividing the Loss and Fixed expenses in line 12 by the expected loss and fixed expense ratio in line 13. This is the net base rate before incorporating the anticipated deviation and compensation for assessment risk per policy.

Q. Would you explain line 15 on page C-1 entitled "Compensation for Assessment Risk Per Policy"?

A. Compensation for assessment risk is a provision which is calculated by Dr. Appel (see his prefiled testimony and Exh. RB-17) to reflect the cost to voluntary market insurers of maintaining sufficient capital to pay the assessments for residual market losses to the extent required by law. If the residual market (Beach Plan and FAIR Plan) does not have sufficient capital, reinsurance and reserves to pay losses for a catastrophic event, then companies writing in the voluntary market will be assessed for such losses even if they do not write in the coastal or beach areas. In effect the voluntary market companies are being required to provide free reinsurance to the policyholders who can only find coverage in the residual market. The voluntary market companies must therefore maintain capital sufficient to cover such losses, even though those companies have not elected voluntarily to write the policies that give rise to those losses. The compensation for assessment risk factor is the provision for compensation that must be paid to voluntary market insurers for bearing this risk of assessments from the Beach/FAIR Plans, i.e., it is the cost of the capital required to support the exposure to potential residual market assessments.

A factor to reflect this exposure was incorporated in the Bureau's most recent property filing (the 2008 homeowners filing). That factor reflected the extremely rapid growth in residual market exposure to losses that has occurred in the last decade, particularly in the Beach Plan. As a result of legislative action in 2009, the exposure of the voluntary market companies to residual market assessments has now been capped at one billion dollars. Dr. Appel's analysis of the necessary compensation for the risk of residual market assessments incorporates this new cap and, as a result, the factor in this filing for compensation for assessment risk is significantly lower than it was in the 2008 homeowners filing.

The compensation for assessment risk of 2.30 is calculated by first multiplying the 5.3% provision by the current statewide base rate of 35.66, resulting in a value of 1.89. To be incorporated in the rates, however, this provision must be adjusted to account for the commissions and taxes, licenses and fees that the companies will need to pay on this additional premium. That is done by dividing the 1.89 by 1 minus the sum of commission and brokerage expense and taxes, licenses and fees expense as shown below.

$$\frac{1.89}{1- 0.15-.029} = 2.30$$

Q. What is the source of the percentage on line 17 for anticipated deviations?

A. The 3.8% provision for deviations is based on an analysis of the last several years of deviation experience for dwelling business.

Q. Would you explain line 18 on page C-1 entitled "Deviation Amount per Policy"?

A. Line 18 is the dollar amount of deviation that needs to be in the final rate to ensure that the selected 3.8% deviation percentage is accounted for.

Q. Would you explain line 19 on page C-1 entitled "Required Base Rate per Policy"?

A. Line 19 is the required base rate that is needed to ensure that sufficient revenue is collected to cover the losses and expenses that are expected to result from the policies written during the year following the effective date of this filing.

Q. Would you explain line 20 on page C-1 entitled "Current Base Rate"?

A. Line 20 is the current base rate for all of the policies written in the most recent year included in the review. This rate assumes that each policyholder is buying only the base coverage.

Q. Would you explain line 21 on page C-1 entitled "Indicated Rate Level Change"?

A. Line 21 is the percentage change in the current rates which will be necessary to make the rates adequate for the cost levels that are expected to prevail in the one year period following the effective date of the filing. It is determined by taking the required base rate per policy on line 19 and dividing it by the current base rate from line 20. This results in an indicated rate level change for dwelling fire of -6.6%.

Q. How are these changes distributed by class?

A. On page C-5 the calculations of the indicated change for fire buildings and contents classes are shown. Column 1 displays the Trended Adjusted Incurred Losses for each of the two classes - buildings and contents. The losses shown are for the latest five years. Column 2 gives the

Five Year House Years total, which is the sum of the exposures by class for the five year period. Column 3 provides the Trended Average Rating Factor. Each year's costs have been trended by using each class's own current cost factors and a loss projection factor. Column 4 gives the Base Loss Cost for each class and total. This loss cost is obtained by dividing the five year total trended adjusted incurred losses by the five year total house years times the trended average rating factor. Column 5 is the credibility assigned to each class's experience, based on the full credibility standard of 500,000 house years for fire. Column 6 is the Credibility Weighted Loss Cost for each class. The complement of credibility for use in this calculation is the Total Base Loss Cost multiplied by the ratio of the class's current base rate to the total current base rate.

The statewide credibility weighted loss cost is obtained by weighting the class credibility weighted loss cost by the individual class house years. Column 7 provides the Indicated Base Loss Cost by class. This is the statewide base loss cost adjusted by the class relativity indicated by the credibility weighted loss cost. Column 8 shows the Current Base Rate by class. Column 9 displays the Expected Loss and Fixed Expense Ratio. The Indicated Net Base Rate is shown in column 10. The indicated net base rate is the sum of the loss cost and fixed expenses divided by the expected loss and fixed expense ratio. Column 11 is the Compensation for Assessment Risk Per Policy. Column 12 is the Base Rate Excluding Deviations. Column 14 is a derivation of dollars of deviation that need to be loaded into the required base rate. Column 15 is the sum of the indicated net base rate before deviations in column 12 and the deviation amount in column 14. Column 16 shows the Indicated Base Rate Change by class. Column 17 shows the Indicated Rate Change Balanced to Statewide Level. This rate change includes the impact of statewide change of -6.6%.

Q. Does the filing contain a revision of the present territory definitions and relativities?

A.

Yes. This filing first introduces the same territory definitions, or boundary changes, that were implemented in the last homeowners rate filing approval in 2008. As with that change, the territorial definition changes proposed in this filing more fairly reflect the loss potential of the counties and areas involved by grouping together counties and areas with similar loss potential. For this reason, one county is being moved from the northern territory to the southern territory where the loss potential is more similar. Also, certain counties in the northern territory that have less loss potential than the more exposed counties are being placed into a new territory consisting of the less exposed counties. The data justifying these new territorial boundary definitions is contained on page F-3. The newly defined territories are given numbers of 7, 8, 48, 49 and 52.

Once the new territory definitions are implemented, the indicated rates for the newly defined territories are shown on page C-8 in column 17 for fire and page C-10 column 20 for extended coverage.

In connection with the overall rate level change, new territory rates are displayed on page A-2. In these rates, the new territorial relativities are determined in such a way that no overall statewide rate level change results. In other words, based on each territory's own indications, the relativities are revised, with coverages in some territories receiving increases and others receiving decreases. The overall statewide change as a result of these territorial changes is 0. When the territorial relativity changes are then compounded with the filed statewide rate level change, the overall change is equal to the filed change, subject to minor rounding differences.

Q. How has the Rate Bureau treated general and other acquisition expense by territory?

A. The Rate Bureau has treated 100% of general expense and other acquisition expense as not varying by territory.

Q. Is the average rating factor for extended coverage on page C-3 determined in the same way for extended coverage as for fire insurance?

A. Yes.

Q. Are the incurred losses and loss adjustment expenses in Columns 1 through 5 on page C-3 determined in the same manner as you testified with respect to fire insurance?

A. Yes, except for the following. The actual hurricane losses for extended coverage, while reviewed and considered, have been excluded and replaced by the "Modeled Base Class Loss Cost", which is displayed in line 12 of page C-3. Also, the actual excess losses in column 2 have been replaced by an excess factor loading included in column 3 of page C-3.

Q. You indicated that losses due to hurricanes have been excluded on Page C-3. Have you excluded them anywhere else in the filing?

A. Yes, they have been excluded in the development of the indications by class and by territory, and in the calculation of the non-hurricane excess factor.

Q. How have these losses been identified in order to be excluded?

A. The method to remove the hurricane losses depends on the detail of the data. For 1950-1965 only statewide data is available; consequently for a year in which a hurricane requires the removal of losses, that year is removed from the calculation of the statewide excess factor. This is shown by the omission of the year in question on page D-30.

Since territory data is available (in varying detail) for 1966-2007, the calculation of the non-hurricane losses is done at the territory level for this period. After it has been determined that a particular hurricane is accounted for by the AIR hurricane model, the territories affected (territories exposed to wind speeds of 40 MPH or higher) are determined by use of recorded wind speeds and central pressures at 6 hour intervals, storm tracks, and wind to non-wind ratios.

The non-hurricane wind losses for a territory are calculated by replacing the hurricane year wind to non-wind ratio by the average wind to non-wind ratio of the non-hurricane years. Given the revised wind to non-wind ratio for the hurricane year, the reported non-hurricane total losses and the reported non-hurricane wind losses are then "backed into." For the years in which the territory codes 01-04 were in effect (1966-1982), the average wind to non-wind ratios are based on the non-hurricane years from 1966-1982. For the years in which the territory codes 04 and 30-41 were in effect (1983-1999), the average wind to non-wind ratios are based on the non-hurricane years from 1983 to 1999.

For 1986-1995, territory losses by month are available for ISO data only. The territory non-hurricane losses for this period are calculated as follows: first the average losses for the month in which the hurricane occurred are calculated based on the non-hurricane years. The average monthly losses are then added to the eleven remaining months of the hurricane year and divided by the hurricane year annual losses resulting in a non-hurricane adjustment factor. This factor is then applied appropriately to either reported losses or adjusted losses by territory for all statistical agents to obtain non-hurricane losses. For severe hurricanes, wind type losses are sometimes reported as water losses or all other property damage losses. To accurately estimate the non-hurricane losses, the above non-hurricane factors are calculated for water and all other property damage and then applied to the water losses and the all other property damage losses.

For 1996-2002, based on information from NOAA and other sources, the specific dates on which a given hurricane was active in North Carolina are determined. The loss experience for ISO is then examined by date and cause-of-loss. Wind losses and losses for other weather-related perils which occurred on these dates are assumed to be hurricane losses. For ISO data, the percentage of hurricane losses to total losses is calculated. To estimate the hurricane losses for statistical agents other than ISO, the percentage of hurricane losses in the ISO data (relative to the ISO yearly total) is applied to the total loss amounts for the other statistical agents.

For 2003-2007, a procedure similar to that of 1996-2002 is used. The difference is that ISO and ISS data is available and examined rather than just the ISO data. For the ISO and ISS data, the percentage of hurricane losses to total losses is calculated. To estimate the hurricane losses for statistical agents other than ISO and ISS, the percentage of hurricane losses in the ISO and ISS data (relative to the ISO and ISS yearly total) is applied to the total loss amounts for the other statistical agents.

Actual hurricane losses of $48,403,352 were removed from 2003; $12,041,861 were removed from 2004; $11,887,972 were removed from 2005; and $2,040,795 were removed from 2006.

Q. Do you have an opinion as to whether the incurred losses excluding hurricanes shown in column 1 on page C-3 of RB-1 accurately represent the anticipated value of dwelling extended coverage incurred losses excluding actual hurricane losses which resulted from claims which took place during each of the years ended December 31 in North Carolina?

A. Yes, I do.

Q. What is that opinion?

A. I believe that the losses excluding actual hurricane losses shown in column 1 do accurately represent the expected ultimate value of those losses.

Q. Could you please describe the figure contained in line 12 labeled "Modeled Base Class Loss Cost" on page C-3?

A. These are the prospective hurricane losses resulting from the hurricane simulation model developed by AIR Worldwide (AIR).

Q. Why was a simulation used to develop the hurricane losses?

A. A simulation was used to develop the hurricane losses because it is a more accurate way of including the exposure than using traditional insurance statistics. Hurricanes are highly variable in frequency, intensity and place of occurrence. The simulation allows for the smoothing out of the hurricane losses as well as better reflecting a more complete distribution of the types of hurricanes that could occur and the potential for losses from these hurricanes at a given location. For example, since we are using the losses from five years of data in the basic ratemaking calculation, if a very large loading for hurricanes like Fran or Floyd hit a certain part of the state during those years, it would be reflected only in those areas of the state, with little or no loading for other areas of the state. Conversely, if there was a five year period without any hurricane activity, it would not be actuarially appropriate to assume that would be the expectation for the future time period. The simulation model produces a more accurate estimate of the loss potential both in terms of territory and dollar value than is possible using any analysis of the insurance data.

ISO relies upon the results of the AIR model in the normal course of its making loss cost filings for the other hurricane-prone states and for making commercial property loss cost filings in North Carolina.

Q. What role did you play with respect to the model?

A. As part of my role as a consultant to the NCRB, as well as part of my role as an ISO actuary who relies upon AIR's hurricane model for ratemaking purposes in numerous states, I have participated in several detailed examinations of the AIR model over the years. Other actuaries at ISO and I review changes when new versions of the AIR model are introduced, in order to make sure that our use of the model complies with actuarial standards of practice.

AIR developed version 12 of its hurricane model in 2010 and it is employed in the filing. This version has been extensively examined and approved by the Florida commission that extensively examines hurricane models. I participated in a due diligence type of analysis with respect to the newest version of the model and its use in this filing. We examined many aspects and changes to the model including those affecting the number of storms that cause loss in North Carolina and the prospective loss costs by territory in North Carolina.

I also examined actual hurricane losses in North Carolina in connection with excluding those losses from the incurred losses in the filing. I determined that the limited amount and the age of much of the available loss data call into question the validity of employing such data for a number of reasons. For one thing, much of the past loss data is quite old and of limited utility. It includes losses from hurricanes that occurred decades ago when housing patterns were different, when houses were built differently, when building codes were different, when construction prices were different, when houses had very different contents, when labor costs and practices were different, etc. There have been no significant hurricanes in the five year period underlying the filing, and these five years do not constitute a valid sample. Indeed, there is not enough experience with hurricanes since accurate records began to be maintained for actuaries to employ actual events as opposed to models. Actual events are not properly predictive of the range of hurricane events that can occur in the next year and the probability of occurrence of those events.

On the other hand, I have concluded that the AIR model is robust, is scientifically based and is far more fair and accurate than employing actual past loss data. It describes the risk of future losses from hurricanes based on scientific principles rather than on the happenstance of past hurricanes. After reviewing the changes to the model that are contained in version 12, it was my conclusion, as well as that of my company and the Rate Bureau, that this latest version is based on scientific advances, is accurate, is appropriate for use in this filing and constitutes the best available information as to prospective hurricane losses.

Q. What did ISO furnish to AIR to enable AIR to perform its analysis?

A. ISO furnished to AIR the North Carolina extended coverage insurance exposure data on the total number of earned house years and earned insurance years by territory for the most recent year in the experience period. These data included ISO, FAIR Plan/Beach Plan, NISS and ISS data and were compiled by ISO. These data are correct to the best of my knowledge, information and belief.

This procedure of sending data to AIR in order to run the hurricane model is similar to the procedure that ISO uses in its loss cost reviews for other hurricane-prone states. In past reviews for the Bureau, territory level data was provided to AIR. AIR then used its industry database to distribute the territory data to individual zip codes. With this filing zip code level data were available and were provided. The use of more accurate exposure data results in more accurate modeled hurricane losses for each territory. Additionally when a zip code was in both a beach and inland territory, AIR employed a split zip code procedure to more accurately model the losses. This treatment has been in general use for other states and results in a more appropriate reflection of the expected hurricane losses.

Q. How are these modeled hurricane losses derived?

A. The AIR model simulates many years of hurricane losses and develops hurricane losses for the portfolio of North Carolina exposures provided. The development of the modeled hurricane losses is shown on page D-32.

Q. How is the amount of insurance in effect determined?

A. For the purpose of developing the hurricane loss cost, the amount of insurance that is in effect is determined as the sum of the various internal limits found in a dwelling extended coverage policy. There are four coverages on a dwelling extended coverage policy: Coverage A (building), Coverage B (other structures), Coverage C (contents) and Coverage D (loss of use). The total amount of coverage can vary by policy form. For form 1, the total limit for buildings is the Coverage A amount, and neither Coverage B nor Coverage D provides additional limits because any Coverage B or D losses are applied against the Coverage A limit. The coverage C limit is as reported on the individual policy record.

For policy forms 2 and 3, the total limit for buildings is the sum of Coverage A, Coverage B, and Coverage D limits. The Coverage B limit is 10% of Coverage A, and the Coverage D limit is also 10% of Coverage A. The coverage C limit is as reported on the individual policy record.

Q. In addition to excluding all hurricane losses and replacing them with the modeled hurricane losses, what other adjustments to the losses have been made because of catastrophes?

A. An adjustment was made to the non-hurricane wind losses in the years in which there were very severe storms such as tornadoes, thunderstorms and other damaging wind storms. The adjustment caps average losses by territory in years where abnormally high losses coincide with severe non-hurricane storm activity. The adjustment relies on a factor developed by using a statewide average consisting of years without losses influenced by severe non-hurricane storms. A long-term excess factor of 1.034 was loaded into the losses. This calculation is shown on pages D-30 and D-31. This procedure has been employed in past filings and is customarily employed to smooth out and properly reflect prospective non-hurricane wind losses.

Q. Are general expenses and other acquisition expenses for extended coverage determined in the same manner as for fire insurance?

A. Yes.

Q. Is the loss trend procedure the same for extended coverage as it was for fire insurance?

A. Yes, it is.

Q. What is the source of the 31.57 item for net cost of reinsurance in line 19?

A. The source of the 31.57 item for net cost of reinsurance is an analysis performed for the Rate Bureau by Dr. Appel. In that analysis he determines the net cost of reinsurance incurred by dwelling extended coverage insurers in North Carolina because of the need to buy catastrophe reinsurance. The net cost of reinsurance is the expense and profit component of the reinsurance premium paid by these insurers (the loss component is in the direct losses used in the overall rate determination). More details of the analysis are included in Dr. Appel’s testimony.

To calculate the net cost of reinsurance per policy, the total dollars of reinsurance is divided by the number of house years for 2007 times the 2007 average rating factor. This quantity is then divided by the expected loss and fixed expense ratio. The actual calculation is:

$$\frac{99{,}593{,}947}{568{,}016 * 7.367 * 0.754} = 31.57$$

Q. Are the remaining portions of the rate level calculation for extended coverage similar to that for fire insurance?

A. Yes, they are.

Q. What other changes does the filing make for dwelling fire and extended coverage insurance?

A. The filing revises the credit for the Windstorm or Hail Exclusion that is available in Territories 07, 08, 48, 49 and 52. The derivation of these credits is shown on pages C-11 and C-12.

Q. Please turn to page A-1 of Exhibit RB-1 and explain what is shown on that page?

A. Page A-1 of Exhibit RB-1 shows the filed statewide rate level change. The Governing Committee decided to apply capping to the indicated rate level changes in order to mitigate the impact to individual policyholders. The maximum change is 25% by territory for fire and extended coverage combined.

Q. What is shown on Page A-2 of Exhibit RB-1?

A. Page A-2 shows the capped rate level change filed for each territory.

Q. Do you have an opinion as to whether the data utilized and the method of calculating the filed rate level changes and the territory definitional changes contained in the filing are sound and actuarially reliable and if so, what is that opinion?

A. Yes, I have an opinion. In my opinion, the data utilized and the ratemaking methodologies used by the Rate Bureau are consistent with generally accepted actuarial procedures and they are actuarially sound and reliable. In my opinion the ratemaking methodology and the revised territories are actuarially sound and produce indicated rates that meet the standard of being not excessive, inadequate or unfairly discriminatory. The filed rates differ from the indicated rates because of the 25% combined fire and extended coverage territory cap. The filed rates are a reasonable step toward an adequate level.

Q. Do you have an opinion as to whether the filed rate level changes contained in Exhibit RB-1 are fully justified and, if so, what is that opinion?

A. In my opinion, they are fully justified and are not excessive in any respect.

Q. Are there any qualifications you wish to attach to your opinion?

A. Yes. In reaching my opinion, I have, as in the past and as is customary in the general course of my work, relied on the accuracy of the data supplied by the Rate Bureau and the ISS, AAIS, NISS and the individual companies that reported data to ISO. I have relied on Professor Vander Weide and Dr. Appel for the determination of the appropriate profit, reinsurance and compensation for assessment risk components of the rates. Additionally I have relied upon the model output provided by AIR Worldwide. I have applied appropriate actuarial standards when reviewing these various data sources.

Q. Does that conclude your testimony?

A. Yes, it does.

PREFILED TESTIMONY OF SHANTELLE THOMAS
2011 FILING
DWELLING FIRE & EXTENDED COVERAGE INSURANCE
NORTH CAROLINA RATE BUREAU

Q. Please state your name and business address.

A. My name is Shantelle Thomas. My business address is 2775 Sanders Road, Northbrook, IL 60062.

Q. By whom are you employed?

A. I am employed by Allstate Insurance Company and have been so employed since 1996.

Q. What is your educational background?

A. I received a Bachelor of Arts degree in Integrated Science and Mathematics from Northwestern University in Evanston, IL in 1996.

Q. What is your employment background?

A. I was employed by Allstate as an analyst in property insurance pricing upon graduation from Northwestern University. From 1996 through July 1999 and from July 2000 to March 2006 I had various actuarial pricing responsibilities for homeowners insurance pricing in various states, including North Carolina. Between March 2006 and February 2008 I had responsibility for pricing countrywide for Allstate's Specialty Product Lines, which includes Renters, Condo, Mobilehome and Dwelling Fire and Extended Coverage insurance. Since that time, I have been the Pricing Director responsible for all of Allstate's personal lines Home and Auto rate filings for various states. I currently have overall actuarial responsibility for homeowners and auto pricing for the Southern third of the United States, including North Carolina.

Q. Are you a member of any professional organizations?

A. Yes. I have been a Fellow of the Casualty Actuarial Society since 2004. I was on the Examination Committee of the Casualty Actuarial Society between 2004 and 2009. I currently volunteer on the Ratemaking and Product Management Seminar Planning Committee. I have been a member of the American Academy of Actuaries since 2001. I have met the continuing education requirements of the AAA.

Q. Are you familiar with dwelling fire and extended coverage insurance ratemaking throughout the country?

A. Yes. With a few exceptions such as North Carolina, Allstate has made its own filings in virtually all of the United States, and I have had responsibility for filings in most states at some point in my career.

Q. Are you familiar with dwelling fire and extended coverage insurance ratemaking in North Carolina and how it differs from other states?

A. Yes. As part of my duties at Allstate, property pricing has been one of my responsibilities since 1996. This has included numerous states, including North Carolina. In addition, Allstate chairs the Property Rating Subcommittee (the "Subcommittee") of the North Carolina Rate Bureau (the "Bureau"). Since April, 2006, I have served as Allstate's representative and chaired the Subcommittee.

In most states, companies set their rates independently. However, North Carolina is unlike other states. In North Carolina, companies must be members of the Bureau, and the Bureau has the responsibility to file rates on behalf of all of the companies in the aggregate. Once the Bureau rate has been approved (and this process is often complicated and time-consuming), companies must charge the Bureau rate unless they obtain approval to charge either more (through consent to rate) or less (through downward deviations). This procedure adds time, uncertainty, and additional administrative burdens to the process of doing business in the state and makes doing business in North Carolina unique. Additionally, it is important to note that the process of consent to rate is constrained by the existence of two residual market mechanisms (commonly known as the Beach Plan and the Fair Plan) in the state that effectively restrict the ability of companies to engage in consent to rate.

Q. Are you familiar with dwelling fire and extended coverage insurance ratemaking in other states?

A. Yes. I have had responsibility for filings in most states at some point in my career.

Q. What is the function of the Subcommittee?

A. Generally, the Subcommittee is concerned with ratemaking matters pertaining to the property insurance coverages subject to the Bureau's jurisdiction, including the development of classifications, rules, rates and rating plans.

Q. What companies were members of the Subcommittee that reviewed the filing?

A. The current members of the Subcommittee are Allstate Insurance Company, Nationwide Mutual Insurance Company, North Carolina Farm Bureau Mutual Insurance Company, State Farm Mutual Automobile Insurance Company, Travelers Indemnity Company, Foremost Insurance Company, American Modern

Insurance Group, American Bankers Insurance Company of Florida, The Horace Mann Companies and United Services Automobile Association. Representatives of these member companies attend the meetings of the Subcommittee and conduct the work of the Subcommittee. Allstate Insurance Company chairs the Subcommittee. All representatives on the Subcommittee are actuaries or have extensive experience in actuarial matters.

Q. Can you identify Exhibit RB-1?

A. Yes. This is a large portion of the filing submitted by the Bureau to the Honorable Wayne Goodwin, Commissioner of Insurance, with respect to revised dwelling fire and extended coverage insurance rates and territory definitions in North Carolina.

Q. Can you identify the document marked Exhibit RB-2 and entitled "Dwelling Policy Program Manual"?

A. Yes. This exhibit is also part of the filing. It includes the manual of rules, rates and classifications used to write dwelling fire and extended coverage insurance in North Carolina. This manual and any approved amendments are on file with the Department. A copy of this manual is maintained at the offices of the Bureau.

Q. Would you describe generally how the Subcommittee was involved in the preparation of this filing?

A. Over the years the Subcommittee has developed the methodologies it has felt were appropriate for ratemaking in North Carolina and has recommended those methodologies to the Bureau's Property Committee and Governing Committee. Generally speaking, the process is as follows. Insurance Services Office ("ISO") consolidates various premium, loss and expense data in the format historically reviewed by the Subcommittee and sends that out to the Subcommittee members. These data include data for business written at or below the Bureau manual rates, business written under consent to rate procedures and business written in the residual market. The Bureau assembles expense data and furnishes it to the Subcommittee. In addition, AIR Worldwide runs its hurricane simulation model to produce estimated hurricane loss costs that are furnished to ISO. Dr. David Appel also analyzes the required profit, reinsurance expense and compensation for assessment risk from the residual market mechanisms. Then, the Subcommittee meets by telephone conference and/or in person to consider all the data and analysis and to formulate its final recommendations to the Property Committee and Governing Committee of the Bureau.

With this filing the same procedure was followed during 2010 leading to the 2011 filing.

Q. Would you describe the basic ratemaking methodology that underlies the filing?

A. The rate indication was determined with a loss cost methodology, rather than a loss ratio methodology. The indicated rate change was determined by first projecting the losses and loss adjustment expenses for the policy period that the filed rates are expected to be in effect. The projected loss and loss adjustment expenses are then divided by historical earned house years to produce loss costs. These loss costs are then adjusted to the base class level. The trended base class loss costs are then credibility weighted with the expected base class loss cost. The measure of credibility is based on the number of house years in the experience period used to develop the loss costs, and in this instance, the data for each of the policy forms is considered fully credible.

Then, other anticipated costs associated with policies expected to be in effect, along with provisions for underwriting profit and contingencies, were added to derive the required base rate per policy. The required base rate was compared to the current base rate to determine the indicated rate level change. This comparison of base rates is an actuarially sound method of developing indicated rate changes. In determining each component of the ratemaking formula, the Subcommittee analyzed the data presented to it and considered the recommendations of ISO's actuary, Robert Curry, and the Bureau's economic consultants, Dr. David Appel and Dr. James Vander Weide, as well as data from AIR Worldwide.

Q. Did the Subcommittee consider the accuracy of data in its review?

A. Yes. Companies and statistical agents employ extensive procedures to assure the quality of ratemaking data. When a possible error is noted, care is taken to analyze the situation and correct the data if possible. If it is not possible to correct the data so that it is acceptable for ratemaking, the company's data is excluded from the review. When data from a company is omitted, the filing notes that fact. In addition, the Subcommittee requested the statistical agents to produce exhibits displaying exposure distributions for key factors such as territory, amount of insurance and protection class for the years in the filing for the top 10 companies. Each company was asked to review and evaluate the accuracy of its data as reported to its statistical agent. Companies have confirmed that they have performed these reviews and that to the best of their knowledge their data are correct in all material aspects.

The Subcommittee believes that the data underlying the 2011 rate filing are reliable and appropriate for ratemaking purposes.

Q. How were the premiums used in the rate level calculations in the filing determined?

A. The calculations are based on premiums expected to be produced by current manual rates. The premiums are determined by applying current manual rates to the exposures in effect during the experience period. This is known as the extended exposure method. Earned premiums at present rates are used to determine average rating factors. The average rating factor is the ratio of the average rate (earned premium at manual level divided by corresponding house-years) and the current manual base rate by territory. The average rating factor is used to convert the pure-premiums incurred during the experience period to the base class level.

Q. How were anticipated losses determined?

A. The starting point for losses is accident years 2003-2007 incurred losses evaluated at 63, 51, 39, 27 and 15 months of development respectively. Loss development factors were applied to estimate ultimate settlement amounts. Historical loss development patterns were observed and the selected factors are the average of the prior years for each 12 month link, consistent with past years' practice.

In order to insure stability in rate levels for extended coverage while maintaining adequacy in the event of wide swings in hurricane and other wind losses, an excess wind procedure and a hurricane loss model have been utilized. Hence, violent shifts in rate level (both upward and downward), which might result from reflecting large hurricane and other wind losses only in the year in which they occur will be avoided. The incurred non-modeled excess losses are those losses that result from unusually severe wind activity (other than hurricane). They are removed from the experience used in developing rates. In order to reflect the impact of excess wind losses (that are not related to hurricanes and not accounted for in the hurricane model) on a long-term basis, non-modeled losses are multiplied by an excess wind factor. A particular year's excess wind losses and the long-term excess wind factors are determined using ISO's standard excess wind procedure. Total excess losses for each year, which are the sum of the capped excess wind and the excess wind losses, are removed from the actual non-modeled losses for the experience period. The long-term excess factor is 1 plus the ratio of the long-term average of the excess loss ratios to the average of the long term normal loss ratios.

Expected hurricane losses are provided by AIR Worldwide. The model was run with aggregate demand surge included. This option accounts for the expected additional cost for supplies and labor if a large hurricane event occurs.

Losses were trended from the midpoint of each experience period to the midpoint of the trend period. As in past years, the Subcommittee reviewed external trend information and pure premium information. The Boeckh Residential Index and the Modified Consumer Price Index are used; these indices are averaged on an appropriately weighted basis and comprise the Current Cost Index.

The loss trending procedure is accomplished in two steps. In the first step Current Cost Factors are applied to each year's losses. The Current Cost Factors are derived from the external indices and, when applied to given year's losses, adjust these losses to a cost level as of November 15, 2009 which is the midpoint of the latest quarter of the external index. In order to trend losses from 11/15/09 to the trend date, a Loss Projection Factor is applied. This projection factor is selected based on a review of the annual change inherent in the latest twelve quarterly points of the Current Cost Index, the actual dwelling pure premium trend and Fast Track trend data.

In reviewing the loss trends, the annual rates of change in pure-premium during the 2003-2007 experience period are higher than the observed annual changes in the external indices. Therefore, to project losses to a 2012 level, a 2.0% additional annual trend was selected for both dwelling fire and extended coverage.

Since the external indices necessarily ignore the effect of policy deductibles, a first dollar procedure to trend from the first dollar of loss is also incorporated into the calculation of the Loss Projection Factor.

Q. Are you familiar with the procedures used to collect the expense experience?

A. Yes. The Bureau sends a data call to all companies annually. Companies complete the expense call, which includes reporting expense dollars as well as premiums at collected level and adjusted to manual level. The Bureau checks and compiles this information for all companies and sends it to ISO for their use in the rate filing. The Bureau also obtains information appearing in the annual statements and the insurance expense exhibits of the companies. This information is part of the official records maintained at the Department. Data from this information is provided to ISO.

Q. How were the anticipated expense provisions used in the filing determined?

A. Commissions and brokerage, taxes, licenses, and fees are a function of premium, and the ratios for these expenses from the North Carolina special calls for expense experience were used. For general and other acquisition expenses, dollar amounts were determined based on the data collected in the Bureau's special calls for expense experience.

The allocated and unallocated loss adjustment expenses are included with losses by use of a factor derived from the Bureau's calls for expense experience. Experience from calendar years 2003-2007 was used. After removing the highest and lowest value, the average of the remaining three years was used. This was done in order to reduce the fluctuation in the ratio due to the variation in incurred losses from year to year.

The Subcommittee reviewed current expense index trends. Based on the review, the Subcommittee selected a 2.5% trend. This factor was then used to trend expense dollars from the midpoint of the base period to the midpoint of the trend period.

The provision for reinsurance costs reflects the Bureau's projection of reinsurers' expenses and profit as a percentage of dwelling extended coverage insurance premium that would be required for reinsurance purchased for North Carolina dwelling extended coverage insurance. The Subcommittee reviewed the analysis performed by Dr. Appel to determine the provision for the net cost of reinsurance in developing the indicated rates and considers this provision to be appropriate. In particular, the Subcommittee recommended the use of AIR Worldwide's warm sea surface temperature event set as the basis for determining the provision for reinsurance costs since reinsurers have been using warm sea surface temperature event sets to determine their rates.

There has been a large growth in the exposure of the residual market (Beach Plan and Fair Plan) in North Carolina over the past few years. If the North Carolina residual market does not have enough reinsurance, capital and reserves to pay losses, the voluntary market faces assessments, and those assessments could be very large in magnitude. The Subcommittee requested that Dr. Appel analyze this situation in detail. The Subcommittee reviewed the analysis performed by Dr. Appel and determined that it would be appropriate to include in the indications a provision reflecting the required compensation to the companies for their exposure to the risk of residual market assessments. The resulting provision for compensation for assessment risk is being included in this filing. More details of this analysis are included in Dr. Appel's direct testimony.

Q. Did the Subcommittee make a determination of the underwriting profit provision to be used in calculating rates in the filing?

A. Yes. The Subcommittee adopted a conservative position with respect to the selection of an underwriting profit provision. Under the law in North Carolina, the Rate Bureau is entitled to utilize in its rates an underwriting profit provision such that the anticipated return on insurance operations (the sum of underwriting profit and investment income from insurance operations) is commensurate with the cost of capital for the industry. In this filing, the selected underwriting profit, when combined with investment income from insurance operations, produces a return on net worth that does not exceed the cost of capital estimates provided by our consultants, and is actually somewhat below the cost of capital estimates. Further, because of the conservative selection made by the Subcommittee, it is also the case that the underwriting profit, when combined with both investment income from insurance operations and investment income from surplus, produces a return that does not exceed the cost of capital. By definition, therefore, the 9.5% provision selected by the Subcommittee and tested in the profit analysis by Dr. Appel, cannot be excessive. The range of cost of capital estimates provided by Dr. Vander Weide was found to be reasonable and accepted by the Subcommittee.

An issue related to underwriting profit is the need for the ratemaking methodology to adequately recognize a systematic bias that causes actual underwriting experience to be different from the provision allowed in the rates. Sources of this systematic bias in property insurance include, but are not limited to, judicial decisions that extend policy coverage beyond what was anticipated in the rates, legislative changes, and regulatory delay or reduction of rate filings and other factors. Note that these events are unpredictable in terms of both when they will occur and their magnitude. Note however that what is not unpredictable is the direction of the bias; the bias that these events introduce is virtually always upward in terms of expected loss costs or downward in terms of expected premium. For example, rate filings are virtually never implemented before the assumed effective date or for more than the original requested amount; judicial decisions with regard to contract language almost never restrict coverage to less than what was intended by the Bureau when it filed policy forms, but such decisions often expand it beyond what was contemplated in the rate level. Major unexpected losses can come from events such as widespread brush fires that are a known risk for North Carolina but that are not reflected in the experience period.

Thus, estimated premium that does not reflect a provision for these contingencies will always fall short of needed premium. When these premiums are inadequate and underwriting losses are observed, an insurer must borrow from surplus to properly indemnify its policyholders or claimants. The contingency provision is intended to provide for these variations in a stable method over time. The Subcommittee believes that a contingency provision is appropriate and necessary, and has conservatively selected a 1% factor in this filing, the same as with all recent property insurance filings.

Q. Have dividends to policyholders been considered in the filing?

A. Yes. The ratemaking statutes require consideration of policyholder dividends. Dividends to policyholders are a return of a portion of the premiums paid by the policyholders. Dividends are an additional cost associated with policies written because they are payments anticipated to be made to policyholders as part of the insurance transaction. The ratemaking formula must recognize <u>all</u> costs that are expected to be associated with the risk transfer, consistent with ratemaking principles. The Subcommittee recognizes the discretionary nature of dividends on an individual company basis. The data shows, however, that the industry, as a whole, pays dividends to policyholders. To ignore dividends would result in rates that would not allow the aggregate industry to realize a fair rate of return. However, since dividends have been very small in recent years, a factor of zero was selected in this filing.

Q. Have deviations been considered in the filing?

A. Yes. Deviations have also been recognized as one of the statutory elements required to be considered in North Carolina. Deviations are an up front reduction from the manual rates. Once a deviation is approved by the Department for an individual insurer, that lower rate must be charged until the deviation is changed in accordance with the statutory provisions. Therefore, deviations are an additional cost associated with the policies written because they represent a portion of manual premiums that will not be collected by the aggregate industry. The ratemaking formula must recognize <u>all</u> costs associated with the risk transfer, consistent with ratemaking principles. Deviations in the marketplace are driven by competition. To exclude deviations in the ratemaking process would have both short-run and long-run ramifications. In the short-run, the industry would be denied a fair return because companies would be reluctant to remove deviations due to the effect on their ability to compete for policyholders they have identified as the better risks in the state. In the long-run, companies would be forced to remove deviations in order to compensate for the inadequacy of rates, and some companies may leave the market or may have to change their manner of doing business simply because the rates would be inadequate to allow them to continue providing the same level of service. The end result would be a less competitive market with a narrower range of services, and the impact of the increased rates would be borne primarily by the best risks in the state. Ignoring deviations would not only be counter to sound actuarial principles, but would also have serious negative implications for the competitive market in North Carolina.

The Subcommittee has selected 3.8% as the deviation level to be recognized in developing the proposed fire rates and 2.4% as the deviation level to be recognized in developing the proposed extended coverage rates. These provisions reflect the Subcommittee's consideration of downward deviations and the limited opportunity for consent to rate due to the residual market mechanisms. A provision for deviations has also been employed in past homeowners filings and is based in part on findings made by the Commissioner of Insurance in previous automobile insurance rate cases to the effect that 5% of premium is the appropriate amount of deviations to anticipate when setting manual rates. The Subcommittee recognized that the Commissioner did not actually include a 5% provision for deviations in his ordered rates in those cases, but for the reasons described earlier, it is necessary and appropriate to include an explicit provision for deviations in developing the proposed rates in this filing. The 3.8% and 2.4% provisions are the average levels of actual deviations over a six year period.

Q. Did the Subcommittee review rate level adequacy by territory?

A. Yes, the Subcommittee reviewed territorial definitions and indicated relative changes by territory based on the redefined territories.

To more equitably reflect prospective losses, the territorial definitions have been revised in this filing to reflect similar redefinitions approved for Homeowners insurance approximately two years ago. In general, one county was shifted to the southern territories, and the northern territory was subdivided into two territories. Then, all of the new territories were renumbered. These changes are explained in the filing.

Based on these new territorial definitions, the indicated relative changes suggest to what extent the territorial rate relativities need to change in order to more equitably spread the overall rate level. The indicated rate level change for a particular territory is determined by comparing the required base class rate to the current base class rate.

The indicated base class loss cost by territory is determined by calculating the total loss cost by territory and applying the resulting territorial relativity to the indicated statewide base loss cost. A credibility value, based on the number of house years underlying the loss cost, is assigned to each territory. Actual hurricane losses have been removed and replaced by estimated loss costs based on the information provided by AIR Worldwide.

The territorial indicated base class loss cost is converted to the required base class rate by performing expense, profit and deviation adjustments at the territorial level similar to those performed at the statewide level.

At the direction of the Subcommittee, Dr. David Appel prepared a risk load analysis that was used to allocate the net cost of reinsurance and the underwriting profit in the rates, based on territorial differences in risk. In this analysis, measures of risk were developed for three "Zones" of North Carolina. These zones are: Zone 1: NCRB territories 7, 8, 48, 49 and 52; Zone 2: NCRB territories 32, 34, 41, 44, 45, 46, 47 and 53; Zone 3: NCRB territories 36, 38, 39, 57 and 60. These Zones continue to be appropriate even though the territories that constitute Zone 1 are being redefined. The measures of risk that were developed by Dr. Appel provide indicated relative levels of return, or profit, necessary for each zone. Conceptually, this methodology reflects the principle that required return is related to risk, and that a varying level of required return should be reflected in the premiums. The statewide impact of the methodology is revenue neutral; the effect is to increase the needed premium on the coast (zone 1) and decrease the needed premium in the western part of the state (zone 3) by way of an underwriting profit and reinsurance provision that varies by zone.

Q: Did the Subcommittee employ modeling of hurricane losses?

A. Yes. As has been done since approximately 1993 the Subcommittee employed hurricane modeling from AIR Worldwide.

The Subcommittee examined various issues relating to hurricane modeling and made decisions with respect to the AIR Worldwide methodology. As previously noted, the Subcommittee again chose to employ the demand surge component of the AIR model as has been done in other recent property filings. This component reflects the fact that, following significant hurricanes, the net cost of virtually everything paid by insurance rises. This includes lumber, bricks, plywood, labor, shingles, hotel rooms and other such items. In addition to actual experience, economic theory dealing with supply and demand supports the use of the demand surge component. The Subcommittee chose not to employ the storm surge component of the AIR model.

The Subcommittee also considered recent advances in the science of hurricane climatology and forecasting, both on a short term basis and on an intermediate term basis. The scientific community appears to agree that sea surface temperatures have increased and that warmer sea surface temperatures result in the formation of more hurricanes. The scientific community appears to disagree as to whether this is the result of long term cycles or global warming. The Subcommittee does not currently take a position as to the cause of the warm sea surface temperature, but the Subcommittee feels that it is demonstrably true that we are in a period of greater activity and that it is expected to continue in the period for which we are making rates and for which primary insurers effectively must purchase reinsurance. This being the case, the Subcommittee felt that merely employing an average of the last 109 years of hurricane activity (using meteorological data back to 1900) is a conservative approach that under-predicts the risk of hurricanes over the period when this filing will be effective.

Following discussions with AIR, the Subcommittee instructed AIR to run its model using its standard catalog and to also run its model using the warm sea surface temperature event set. As has been done for a number of years, the resulting modeled losses from the standard catalog were employed as the modeled loss costs used in the rate calculations, and the losses from the warm sea surface temperature catalog were employed by Dr. Appel in his determination of the net cost of reinsurance factor. This use by Dr. Appel of these modeled losses is based on the fact that reinsurers use these warm sea surface temperature models to price their reinsurance treaties with primary insurers.

Q. Did the Bureau examine the results of AIR's simulations?

A. Yes. AIR introduced a new version (version 12) of its hurricane model in 2010, and this version is employed in the filing. As part of my role as chair of the Rate Bureau’s Property Rating Subcommittee, I have participated in an examination of changes to the model.

This effort was aimed at examining those updates and changes to the model that might affect the number of storms that cause loss in North Carolina and the prospective loss costs by territory in North Carolina. We reviewed with AIR the changes that might affect those matters. Those changes included the following: extending the analysis of hurricanes for a period of time longer than 24 hours after landfall; employing the actual ground cover characteristics of areas over which a hurricane travels after landfall in order to determine the extent to which winds are degraded because of friction effects; the inclusion in the data base of three previously unreported hurricanes that made landfall in North Carolina in the early 1900's, as determined recently by governmental meteorologists; and other changes. All of these changes in version 12 were determined to be actuarially sound and reasonable improvements that were based on AIR's scientific analysis.

In connection with examining changes to the AIR model, we also examined actual hurricane losses in North Carolina during the filing's five year experience period. I concluded that the actual losses during this five year period are not fairly representative of the reasonably expected hurricane losses and that it would be actuarially unsound to make assumptions as to hurricane losses based on that period. I would add that no five year period can be said to be representative of the loss potential from hurricanes, since major hurricanes are so infrequent but devastating in effect. Further, we determined that hurricane loss experience from longer periods would require the use of data that is relatively old and limited in detail. Much of the older insurance data is of limited utility because it does not contain information as to territory, the date of loss or other such relevant information. Also, much of the data relates to losses that occurred many years ago when housing patterns were different, when housing materials were different, when building codes were different, when houses contained different types of contents, when construction prices were different, when labor costs and practices were different, etc. These facts led me to determine that employing such data would be actuarially unsound, particularly given my determination that AIR's hurricane model is actuarially sound.

Q. Do you have an opinion as to whether the rate level changes contained in the filing are excessive, inadequate or unfairly discriminatory?

A. Yes.

Q. What is that opinion?

A. First let me note that I have relied on the accuracy of the data and analysis supplied by the statistical agents, the Bureau and AIR Worldwide as reviewed and checked and on the reinsurance and profit analyses performed by Dr. Appel and Dr. Vander Weide. With these qualifications, it is my opinion that the indicated rates meet the standard of being not excessive, inadequate or unfairly discriminatory. The filed rates have been developed by applying a 25% combined fire and extended coverage territory cap to the indicated rates. This cap was selected by the Governing Committee of the Bureau. The Committee has selected a cap in order to mitigate the impact of the filing on individual policyholders. The filed rates are a reasonable step toward an adequate level.

Q. Does this conclude your prefiled testimony?

A. Yes.

PREFILED TESTIMONY of DAVID A. LALONDE

2011 DWELLING INSURANCE RATE FILING BY THE NORTH CAROLINA RATE BUREAU

1. Q. What is your name and address?

A. My name is David Lalonde. I live at 1073 Augustus Drive, Burlington, Ontario.

2. Q. What is your occupation?

A. I am Senior Vice President of AIR Worldwide Corporation a corporation in Boston, Massachusetts.

3. Q. What is AIR Worldwide Corporation?

A. AIR Worldwide (AIR) is a scientific leader and most respected provider of risk modeling software and consulting services. AIR founded the catastrophe modeling industry in 1987 and today models the risk from natural catastrophes and terrorism in more than 50 countries. AIR is headquartered in Boston with additional offices in North America, Europe, and Asia.

4. Q. How many employees does AIR have?

A. AIR has over 300 employees. Of those over 100 have graduate degrees and over 40 have PhDs. Their disciplines include meteorology, wind engineering, actuarial, computer engineering and statistics.

5. Q. Could you describe your duties as Senior Vice President of AIR?

A. Over the years, I have had multiple duties with AIR. My chief duty currently is to oversee AIR's Consulting and Client Services group, providing Catastrophe Loss Analysis Services (CLAS™) and Risk Transfer Services (RTS™). I also have responsibility for regulatory work.

6. Q. What is your educational background?

A. I have a Bachelors of Mathematics (Honours) in Actuarial Science with Statistics from University of Waterloo and I am a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries (MAAA). In my capacity as an actuary, I observe the actuarial standards of practice with respect to the analysis and use of models in insurance ratemaking. I volunteer to do work for the actuarial organizations and am good standing with them. I meet their continuing educational requirements.

7. Q. What has been your work experience since obtaining your degree?

A. I was employed at Economical Group from 1985-89 and became Manager of Actuarial Services. From 1989-1993 I was employed at Insurance Corporation British Colombia where I became Chief Actuary. I was employed at Coopers & Lybrand 1993-95 as Director, Casualty Actuarial Risk Management Consulting.

In 1995 I was employed by Applied Insurance Research, Inc., the predecessor of AIR Worldwide Corporation. I have now been employed by AIR for 15 years, during which time I have had extensive experience with the AIR model.

8. Q. Please describe your technical publications and speaking engagements relating to computer models and insurance.

A. I have co-authored papers dealing with the use of computer models in insurance. These papers have been peer reviewed and published in various journals. These include; (i) "Aggregation and Correlation of Reinsurance Exposures," CAS Forum, Spring 2003; (ii) "Aggregation and Correlation of Insurance Exposures," CAS Forum, Summer 2003; and (iii) "The Basis Risk of Catastrophic-loss Index Securities," Journal of Financial Economics, 2004, Elsevier, vol. 71(1), Pages 77-111. I was also a contributing author of: "Catastrophe Modeling: A New Approach to Managing Risk," Springer, 2005.

In addition, I present regularly at various continuing education meetings of the Casualty Actuarial Society and at other meetings and seminars on the topic of the use of models in catastrophe risk management. I have presented annually at the AIR Client Conference since 1996 on various catastrophe risk management topics involving modeling. I have made numerous presentations directly to individual insurers, reinsurers, investment bankers, rating agencies and regulators.

9. Q. Please describe your experience with respect to the issue of computer modeling of windstorms, including tornadoes, hurricanes, hailstorms and other storms.

A. I began modeling insurance risk in 1985; while at ICBC I implemented a Stochastic Planning Model to manage overall corporate risk. I began work on the modeling of natural hazard risk including tornadoes, hurricanes, hailstorms and other storms in 1995. Based on my experience and analysis, I have been charged by AIR with the responsibility for explaining the model in external settings such as the Florida Commission on Hurricane Loss Projection Methodology that has performed an extensive scientific review of hurricane models on an annual basis.

10. Q. Could you characterize your familiarity with the AIR hurricane model that is used by the North Carolina Rate Bureau in this filing?

A. As described above, I have worked with AIR's hurricane model since 1995. I am familiar with all aspects of AIR's hurricane model. I work closely with members of

AIR’s staff involved in the development, maintenance and application of AIR’s hurricane model. My work involves review of all model components. I feel that I am well-suited to the task of testifying about the model as a result of my actuarial and statistical expertise, my many years of modeling experience and my knowledge of all of the scientific components of the model and how they interrelate with each other.

11. Q. What has been your relationship with the scientific and technical staff at AIR that has allowed you to gain personal knowledge as to AIR’s US. Hurricane model?

A. In my regulatory role I am responsible for AIR’s annual model submission to the Florida Commission on Hurricane Loss Projection Methodology. In this capacity, I deal closely with our scientific staff members. These include meteorologists, wind engineers, programmers and others who develop, implement, enhance and explain AIR’s model. I also work closely with internal staff members who utilize the model on a day-to-day basis on behalf of AIR clients. I have also had extensive exposure to the technical details of the model components throughout the development of the model. As an actuary with experience in catastrophe modeling I have an understanding of how the various components of the model interrelate to generate estimates of potential loss.

12. Q. What has been your role in explaining the model to regulators?

A. In addition to past filings in North Carolina, I have presented and explained the AIR model to numerous regulators, including those in Maryland, Texas, Hawaii, New York, South Carolina, Massachusetts, Florida, Rhode Island and Connecticut. AIR has been directly involved in ratemaking proceedings in the states of Florida, Massachusetts, Maryland and North Carolina. I have provided testimony in Florida, North Carolina and Massachusetts, and I have been responsible for answering detailed questions from insurance departments relating to hurricane modeling and its use in rate filings in the states of Alabama, New York, Texas, Hawaii, and Louisiana.

13. Q. Please describe the companies or organizations for which you have consulted in connection with the computer modeling of windstorm losses.

A. More than 400 organizations obtain AIR's services. AIR provides catastrophe risk assessment products and services to primary insurance companies, to reinsurers, to intermediaries, to coastal Beach and FAIR plans and other residual market organizations, to state funds, and to other insurance related organizations. We also provide services to investment banks and investors in catastrophe bonds.

14. Q. Have these companies and organizations relied upon your hurricane model?
A. Yes, they have relied upon our model and our methodology in many different contexts and in many situations.

15. Q. Please explain how these companies and organizations have relied upon your computer simulated hurricane loss estimates?

A. Reinsurers use AIR Software Systems (CATRADER®, CLASIC/2™, CATSTATION ™) to estimate expected and potential large losses on the reinsurance treaties that they write with the primary companies. Based on these expected loss estimates as well as other underwriting information, reinsurers develop the rates that they charge for catastrophe reinsurance treaties with primary companies. Reinsurers decide how much, if any, to participate in catastrophe, aggregate excess or pro rata treaties. Primary companies use our services and software systems to estimate their loss potential to catastrophic events such as hurricanes and earthquakes. They are also interested in estimating large loss potential, commonly referred to as "probable maximum losses." This information helps them to decide how much catastrophe reinsurance they need to buy to protect their company's solvency. Particularly after Hurricane Andrew, which caused numerous primary companies to become insolvent, primary companies want to make sure that they are not overly exposed to a single catastrophic event. Primary companies also use our services and software systems for estimating catastrophe pure premiums and loss costs in various geographical areas.

The coastal FAIR and Beach Plans provide their boards with the results of AIR analyses so that they can estimate their potential losses due to catastrophic events. They use our analyses to decide on levels of surplus to maintain and reinsurance to purchase. They also use our analyses to advise primary companies as to potential assessments.

Intermediaries use our services to provide catastrophe loss analyses to their primary company clients.

AIR also provides hurricane loss estimation services to the investment community in conjunction with various catastrophe bond offerings that have been issued. Issuers and purchasers of catastrophe bonds as well as bond rating agencies use the probabilistic estimates derived from the AIR catastrophe models as the primary basis for assigning catastrophe bond ratings which in turn affect the price of those bonds.

16. Q. Have you been asked by the North Carolina Rate Bureau to prepare an analysis based on your model of hurricane loss potential for the state of North Carolina?

A. Yes.

17. Q. What specifically have you prepared for the North Carolina Rate Bureau relating to North Carolina dwelling insurance?

A. We have prepared a report for the North Carolina Rate Bureau based on an analysis using a simulated sample of 100,000 "years" of potential hurricane experience based on a standard view of the hurricane risk. A copy of our report is attached hereto as Exhibit RB-6.

We have also prepared a report using a simulated sample of 50,000 “years” of potential hurricane experience that incorporates the impact of elevated sea surface temperatures

(SSTs) in the North Atlantic on hurricane activity (the Warm Sea Surface Temperature or "WSST" catalog simulation). A copy of our report is attached hereto as Exhibit RB-7.

A simulated "year" in this context represents a hypothetical year of hurricane experience that could happen in the current year. For the North Carolina Rate Bureau we used exposures for 2007, which was the most recent year available. These large samples of simulated loss experience enabled us to estimate hurricane pure premiums and loss costs as well as the probabilities of losses of various magnitudes.

18. Q. What is meant by the term "pure premiums"?

A. Pure premiums are calculated by dividing the long run average annual aggregate losses by the number of risks, i.e., the house years.

19. Q. What is meant by the term "loss costs"?

A. Loss costs are calculated by dividing the long run average annual aggregate losses by the insurance in force, i.e., the insurance years plus the liabilities for contents and other coverages.

20. Q. Please describe the approach that you used to develop your reports.

A. Our approach is that of a computer simulation model. Specifically, in the CLASIC/2™ software, we ran our Atlantic Tropical Cyclone Model, version 12 ("AIR hurricane model" or "AIR model" or "the model"). The NCRB provided exposure information used to generate the loss estimates. The exposure file contained information on the number of risks, coverage, and amounts of insurance. This data was reviewed for reasonableness and input into the model. The data was geocoded based on the zip code present in the record. Finally, the model was run, simulating potential future hurricane losses and in the process applying policy conditions. The output of the model contains information such as average annual loss which is used in developing rates.

21. Q. Why are models the preferred method for developing potential future hurricane losses?

A. AIR was the first company to develop probabilistic catastrophe modeling as an alternative to the standard actuarial or "rule of thumb" approaches on which insurance companies previously had to rely for the estimation of potential catastrophe losses. In 1987, AIR introduced to the insurance industry a modeling methodology based on simulation techniques and mathematical approaches that had been long-accepted in a wide variety of scientific disciplines. Since the inception of this new approach, the AIR hurricane model has undergone a comprehensive and continuous process of refinement, enhancement, validation, and review. The current version of the model contained in this filing was recently updated based on a comprehensive process of scientific review that began in 2007 and continued into 2010.

Traditional actuarial techniques had relied on data on past catastrophe losses to project future losses. However, the scarcity of historical loss data resulting from the infrequency of hurricane and other catastrophe loss events makes standard actuarial techniques of loss estimation inappropriate for determining prospective catastrophe losses. Furthermore, the usefulness of the limited loss data that does exist is significantly limited because of the constantly changing landscape of insured properties. Property values change significantly over the years, along with the costs of repair and replacement. Building materials and design and construction practices change, and new structures may be more or less vulnerable to catastrophe events than were the old ones. New properties continue to be built in areas of high hazard. Therefore, the limited loss information that is available is not suitable for estimating future losses

Information from historical losses by themselves does not provide a complete indication of what will occur in the future. In the case of the model we use the historical information and allow for permutations of the parameters and locations for future events, giving a more robust picture of the loss potential in North Carolina.

22. Q. Does the AIR model produce an unbiased estimate of expected hurricane losses in North Carolina?

A. Yes. While the AIR model has been developed and updated by AIR's internal team of scientists and engineers, it has also been peer reviewed by independent experts in the field. Examination of modeled versus historical losses has validated the model and has revealed no systematic bias in terms of overestimation or underestimation. Our model is relied upon both by primary insurers and by reinsurers, as well as others.

23. Q. Do you know how many years of dwelling insurance data exist for North Carolina?

A. I am advised that some data for dwelling insurance exists back to approximately 1950 but that the data is very limited in detail until more recent years.

24. Q. What is your opinion as to whether dwelling insurance data for the period from 1950 to 2007 adequately represents the state's likely exposure to hurricanes.

A. In my opinion, that period of insurance loss data is not sufficient to estimate the true hurricane loss potential in North Carolina. Hurricanes, particularly intense hurricanes, are low frequency events. The absence or presence of even one Category 4 or 5 hurricane (under the Saffir-Simpson scale) can dramatically influence the loss potential calculated over a short time horizon. There has been one Category 4 storm that has made a landfall in North Carolina since 1900 (Hazel in 1954). Several others could easily have done so if slightly different weather conditions had been present.

Furthermore, as stated previously, the validity of the historical loss data that does exist is limited because of the constantly changing landscape of insured properties. For instance, since Hurricane Hazel devastated southeastern North Carolina in 1954, there are many more houses at the coast that may have been built according to more modern construction practices and contain different levels of contents. It is questionable whether the cost data for repairing and replacing houses from 1954 can validly be compared with cost levels today.

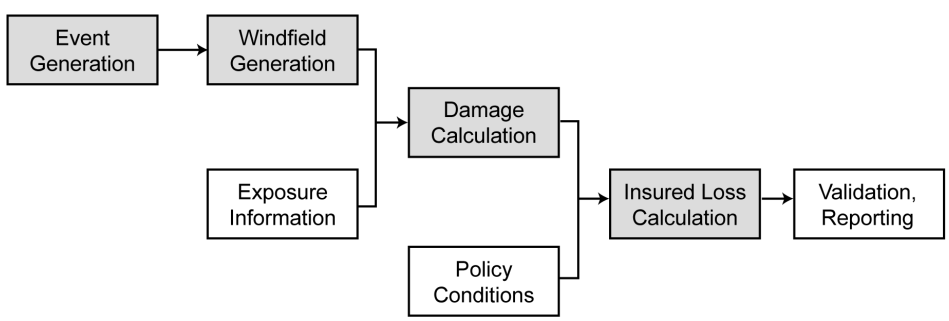
For these reasons, a far superior measure of North Carolina's current exposure to hurricanes can be gained by using a computer simulation model, which is grounded in historical data and documented science. Modeling reflects the broad range of events that could occur in the next hurricane season.

25. Q. What is a computer simulation model?

A. Basically, a computer simulation model is a series of computer programs which describe or model the particular system under study. All of the system’s significant variables and interrelationships are included. A high-speed computer then "simulates" the activity of the system and outputs the measures of interest. AIR's hurricane simulation model incorporates random variables. Numbers are generated from the probability distributions of random variables to assign values to the variables for each model simulation. The probability distributions are usually standard statistical distributions selected on the basis of good fits with empirical data and are consistent with and supported by historical data and published literature.

Many simulations or iterations are performed to derive average loss costs from simulation models. Many simulations are necessary so that the output distribution converges to the true distribution and that model-derived estimates are "stable.”

The figure below illustrates the component parts of the AIR model (gray boxes). Each component represents both the ongoing efforts of the research scientists and engineers who are responsible for its design and the computer processes that occur as the simulations are run.



26. Q. Is computer modeling commonly used and relied on in meteorology and other fields?

A. Yes. Computer simulation models are universally used and relied upon every day in meteorology and many other fields. They are particularly useful tools for the analysis of complex problems involving the combination of multiple variables whose underlying distributions do not have closed form analytical solutions. In current operational hurricane forecasting practice, experts in the National Hurricane Center (NHC) rely heavily on various kinds of computer models. These models range in complexity from simple statistical models to three-dimensional primitive equation models. The statistical and two-dimensional models are maintained by the Tropical Prediction Center (TPC). The three-dimensional models are maintained by the National Centers for Environmental Prediction's (NCEP) Environmental Modeling Center (EMC), a governmental organization which monitors meteorological conditions.

There are numerous advantages of the computer simulation approach. Such an approach is able to capture the effects on the catastrophe loss distribution of changes over time in population patterns, building codes, amounts insured, construction costs and other factors. Further, the historical record is limited, and the stochastic catalog of events is designed to capture the potential of experiencing loss from events which have not happened, but are nevertheless realistic and possible. Also, simulation models provide a good means to analyze the impact of new scientific understanding.

27. Q. How long have computer simulation models been used in insurance?

A. AIR pioneered the probabilistic catastrophe modeling technology that is used today by the world's leading insurers, reinsurers, regulators and financial institutions. The AIR hurricane model has been in use by clients since 1987.

28. Q. How many simulations are typically performed in modeling?

A. There is no standard number of simulations that are performed. The required number is a function of the number of random variables and the probability distributions of those variables. The required number also depends on the geographical resolution of the data and the convergence level desired. The number of iterations can, however, be estimated using a formula which is based on the Central Limit Theorem. The Central Limit Theorem states that for a large number of samples, the normal distribution is a good approximation of the mean of the samples.

Additionally, model output is tested for "convergence" by re-calculating the various moments or percentiles of the output distributions after adding more simulations. The output is said to have converged when running additional simulations does not change significantly the output distributions.

29. Q. How many simulations did you perform for your study as to North Carolina dwelling insurance?

A. We performed two analyses, each with a different number of simulation "years."

One analysis was performed with 100,000 "years" of simulations, based on a standard view of the hurricane risk. This analysis formed the basis of the prospective hurricane losses employed by the Rate Bureau in its filing.

Additionally, we performed an analysis with 50,000 “years” of simulations that incorporates the impact of warm sea surface temperatures (WSSTs) in the North Atlantic on hurricane activity. This analysis formed the basis of the analyses by Dr. Appel who noted in his testimony that reinsurers price reinsurance based on the existence of warm sea surface temperatures.

30. Q. What is the implication of using 100,000 simulated "years" vs. 50,000 simulated "years,” and is each an appropriate number of simulations?

A. Both are appropriate numbers of simulations. A 100,000 “year” simulation yields results that are stable and appropriate for base rate-making purposes, where results are drilled down to the relatively high geographical resolution of territory(s).

A 50,000 “year” simulation yields results that are stable and appropriate for use at a lower geographical resolution, such as zones.

31. Q. What is a Monte Carlo simulation model and what are its uses?

A. Our approach was based on the Monte Carlo simulation method which is a generally accepted and frequently used mathematical technique. This technique has been used extensively in the fields of operations research, nuclear physics, insurance and many other fields. With the advent of powerful computers that enable such simulations to be run quickly and relatively cheaply, the uses for this technique have expanded greatly.

One of the first uses of a Monte Carlo simulation as a research tool was for work on the atomic bomb during World War II. With the advent of powerful computers, the uses for this technique expanded. Computer simulation models are particularly useful tools for the analysis of problems that involve solutions that are difficult to obtain analytically.

As one noted authority, Law and Kelton, has stated: "Most complex, real-world systems cannot be accurately described by a mathematical model which can be evaluated analytically. Thus, a simulation is often the only type of investigation possible." The natural hazard loss-producing system involving the analysis of potential hurricanes is one such system.

32. Q. What is a natural hazard simulation model?

A. A natural hazard simulation model is a model of the natural disaster "system." The primary variables are meteorological in nature. As to hurricanes, the AIR research team collects the available scientific data pertaining to the meteorological variables critical to the characterization of hurricanes and therefore to the simulation process. These primary model variables include landfall location, central pressure, radius of maximum winds, gradient wind reduction factor, peak weighting factor, forward speed, and track direction. Data sources used in the development of the AIR hurricane model include the most complete databases available from various agencies of the National Weather Service, including the National Hurricane Center.

After the rigorous data analysis, AIR researchers develop probability distributions for each of the variables, testing them for goodness-of-fit and robustness. The selection and subsequent refinement of these distributions are based not only on the expert application of standard statistical techniques, but also on well-established scientific principles and the latest scientific studies of how hurricanes behave.

These probability distributions are then used to produce a large catalog of simulated events. By sampling from the various probability distributions, the model generates simulated “years” of event activity. A simulated year in this context represents a hypothetical year of hurricane experience that could happen in the next hurricane season. The AIR model also allows for the possibility of multiple events occurring within a single year. That is, each simulated year may have no, one, or multiple hurricanes, just as occurs in an actual year.

Many thousands of these scenario years are generated to produce the complete and stable range of potential annual experience of tropical cyclone activity. The pattern and distribution of the simulated years is based upon the pattern of historical years because their derivation is based on a scientific extrapolation of actual historical data. The pattern and distribution represent the broad range of events that could occur in the next hurricane season. The next season could have no storms affecting North Carolina or multiple storms affecting North Carolina. It could have a Category 1 storm or a rare Category 5 storm. The model simulates these events in proportion to their likelihood based on the underlying science and data.

Once values for each of the important meteorological characteristics have been stochastically assigned, each simulated storm is propagated along its track. Peak wind speeds and wind duration are estimated for each geographical location affected by the storm. Based on peak winds and duration, damages are estimated at each location for different types of structures. Also, policy conditions are applied to estimate the insured losses resulting from each event.

As opposed to purely deterministic simulation models, probabilistic simulation models such as the AIR model enable the estimation of the complete probability distribution of losses from hurricanes. Based on this probability distribution, average hurricane losses can be derived.

33. Q. What are the meteorological data sources that underlie your model?

A. The following are key data sources that underlie the AIR model.

Source	Years of Data
Tropical Cyclone Data Tape for the North Atlantic Basin, HURDAT	1900-2008
NOAA Technical Memorandum NWS TPC-5	1851-2006
Monthly Weather Review	1900-present
NWS-23	1900-1976
NWS-38	1900-1984
Neumann, Charles J., “Tropical Cyclones of the North Atlantic Ocean, 1871-1998.” NCDC, NOAA	1900-1998
National Hurricane Center Preliminary Reports for Specific Hurricanes	1977-2006
National Land Cover Dataset	1999-2001
DeMaria Extended Best Track Dataset	1988-2008
NOAA/AOML/Hurricane Research Division GPS Dropsonde data	2002-2005
http://weather.unisys.com/hurricane/index.html	1900-present

34. Q. Are all of these sources governmental reports?

A. All are except for the Monthly Weather Review, which is a peer-reviewed journal published by American Meteorological Society, the DeMaria Extended Best Track Dataset, which is an academic dataset maintained by researchers at the University of Colorado, and the Unisys web site which is maintained by Unisys Corporation.

35. Q. Are these sources generally accepted and relied upon in the meteorological and insurance communities?

A. Yes.

36. Q. What steps were taken to assure that the meteorological data underlying the model were correctly inputted into the model?

A. When the meteorological and other data are input into the model, we consistently follow the policy of carefully cross-checking and verifying the numbers for accuracy. We continually review our model and the underlying meteorological data to make sure that the data have been input correctly. We also compare our model-generated data with the actual historical data to make sure that there is a close match. For example, we overlay maps of our simulated wind speeds on maps of the actual wind speeds for actual historical events.

37. Q.   Turning to basic meteorological concepts, what is a hurricane?

A.   Hurricanes form when warm ocean water evaporates, is further warmed by the sun, and rises to create a high, thick layer of humid air. This rising of warm, dense air creates an area of low pressure, known as a depression, near the ocean's surface. Surface winds converge and, due to the earth's Coriolis force, display a clear cyclonic pattern.

The inward rush of peripheral surface winds toward the central area of low pressure, the rise of warm humid air in the center, and the subsequent outflow away from the system at high altitude, combine to create a self-sustaining heat engine. The warmer the water temperature, the faster the air in the center of the system rises. The faster this air rises, the greater will be the difference between the surface air pressures inside and outside the vortex.

Air flows from areas of relative high pressure to relative low pressure. The greater the difference between peripheral and central pressures, the faster the inflow. When wind speeds reach 40 miles per hour, the depression reaches tropical storm status. When wind speeds reach 74 miles per hour, the storm is designated a hurricane or typhoon. The term "super-typhoon" is used for tropical cyclones that reach maximum sustained 1-minute surface winds of at least 130 knots, which is the equivalent of a strong Category 4 or Category 5 hurricane in the Atlantic basin.

38. Q.   What is meant by sustained wind speed?

A.   The term sustained wind speed refers to the wind speed averaged over a given period of time, such as one or ten minutes, or an hour. Generally for the purpose of this testimony as to hurricanes, a one minute sustained wind speed is used. The speed of shorter period gusts or lulls may be considerably higher or lower than the sustained wind speed. For this purpose, surface wind speed is defined as the wind speed at 33 feet (10 meters) above ground.

39. Q.   What are the categories of hurricanes?

A.   Under the Saffir-Simpson Hurricane Wind Scale, there are five categories of hurricanes.   Categories 3, 4 and 5 storms are called "major" hurricanes.   They are categorized according to sustained wind speeds as follows:

Saffir-Simpson Hurricane Wind Scale

Category	Wind Speed (mph)

1	74-95
2	96-110
3	111-130
4	131-155
5	>155

40. Q. How many hurricanes made landfall in the United States in the historical experience period?

A. One hundred and eighty-three hurricanes made landfall in the U.S. during the sample period (1900-2008). A single hurricane may comprise several landfalls. For example hurricane Donna in 1960 had three landfall points including one in North Carolina. When accounting for multiple landfalling events, there were 209 hurricane landfalls in the U.S. during the same period, 25 of which are North Carolina landfalls. By landfall point, I mean the latitude and longitude coordinates of the place where the center of the wind circulation of the hurricane (commonly called the eye) crossed from the ocean to land.

Researchers, as part of an organized reanalysis of historical hurricane data, have recently identified that three additional hurricanes made landfall in North Carolina during the period of 1900-2008. These three storms are in the HURDAT data and have been added to AIR's historical data base in the most recent update and are reflected in the prospective loss costs that AIR provided to the Rate Bureau.

In addition to landfalling hurricanes, scientists have analyzed historical data on the storm tracks of bypassing events. A bypassing event is defined as a hurricane that does not make landfall but causes damaging winds over land.

41. Q. The model results in approximately 58,000 events causing loss in North Carolina during the 100,000 "years" simulated. Does that conform with history?

A. Yes, although it is important to distinguish that this number consists of a lot of different types of events. A small number of those events are major hurricanes making landfall in North Carolina and causing significant losses in North Carolina. Events in history meeting these criteria include Hurricane Hazel, which was a Cat. 4, Hurricane Fran, which was a Cat. 3, and Hurricane Floyd, which was a Cat.2. A small number of those events are major hurricanes that make landfall elsewhere and then continue on to make an impact in North Carolina, such as Hugo, which hit Charleston as a Cat. 4 before continuing through North Carolina. These "famous" historical storms caused large losses and deservedly receive a great deal of publicity, but they do not constitute a large percentage of the total number of storms causing loss in North Carolina.

The total number of storms causing loss in North Carolina is comprised of many other types of events, most of which are small in terms of losses. Some examples of the types of events that can impact North Carolina with relatively modest levels of loss include:

- Storms that make landfall in the Gulf of Mexico and travel north through central or western North Carolina, resulting in minimal wind losses in North Carolina.
- Storms that make landfall in Florida, Georgia or South Carolina, continue inland and cause minimal losses in various parts of North Carolina.
- Storms that make landfall in Florida, go back out to sea and make landfall in North Carolina.
- Bypassing storms that never make landfall, such as Hurricane Earl in 2010. These can be storms that bypass North Carolina and make landfall in New England.

These examples are not intended to represent the complete list of types of storms that could impact North Carolina, but rather a subset of the diverse nature of events that could result in losses in the state. In addition, there have been numerous years in which multiple storms cause losses in North Carolina. For instance, in 1955 three storms made a direct landfall in North Carolina, and in 2004 more than three storms made landfall in the Gulf of Mexico or Florida and caused losses in North Carolina.

42. Q. What was the most intense hurricane to directly strike North Carolina during the period 1900-2008?

A. Hazel, a Category 4 hurricane, in 1954 was the most intense hurricane to hit North Carolina during this period from a meteorological standpoint. Several other strong hurricanes were "near misses" during this period. Of course, North Carolina may experience much more severe storms than Hazel at some point in the future. Hazel was by no means the worst case scenario for the state, even though it was the worst storm during the period during which good records are available.

43. Q. What are "bypassing" storms and how are they handled?

A. Bypassing storms are hurricanes which do not actually make landfall (i.e., where the center of the hurricane eye never actually comes on shore) but where winds that cause losses are recorded on-shore. Bypassing storms are modeled ike all other hurricanes starting with estimates of the frequency and location of such storms. As is the case with landfalling hurricanes, the frequency and location distributions of bypassing hurricanes have been derived from the historical record and other scientific information. The most recent changes to the AIR model reflect an increase in the number of bypassing storms that have been identified, based upon continuing analysis of the historical data.

A recent example of a bypassing storm is Hurricane Earl in 2010. Earl was a bypassing storm that had the potential to make a direct landfall in North Carolina. However, in 2010 the location and influence of the so-called “Bermuda High” caused many storm tracks, including Earl, to move northward without making a landfall. Had conditions been different, Earl could have made a landfall and caused significant loss in North Carolina. In the case of North Carolina, there have been numerous bypassing storms that, if steering currents had been slightly different, could have made landfall and have caused significant losses.

44. Q. Are there any climatological factors influencing hurricane frequency and intensity in general and with respect to North Carolina in particular?

A. Yes. There are a number of climate signals that are correlated with mechanisms within the earth's environment that impact hurricane activity in the Atlantic Basin. These include the Atlantic Multidecadal Oscillation (AMO), the El Nino Southern Oscillation (ENSO), the Quasi-Biennial Oscillation (QBO), and the North Atlantic Oscillation (NAO).

The AMO is the oscillation of sea surface temperatures in North Atlantic, which fluctuates over a period of several decades. We are currently in a period of warmer than average sea surface temperatures.

The ENSO is the oscillation of sea surface temperatures in Eastern Pacific Ocean, which fluctuates over a period of approximately 2.5 to 7 years. El Nino conditions result in stronger than average wind shear over the Atlantic Ocean, which is detrimental to hurricane development. By contrast, La Nina conditions are more conducive for hurricane formation due to the resulting lower wind shear.

The QBO is the oscillation in wind directions over the tropics in the upper atmosphere, which fluctuates about every 2 years.

The NAO is the large scale oscillation in atmospheric pressure in the Atlantic Ocean between the subtropic high and the polar low pressure system, which fluctuates over a period of days, weeks, or months. These factors have different impacts on hurricane activity in the Atlantic basin.

45. Q. How are these factors incorporated into the AIR model?

A. These factors are not explicitly accounted for in the standard 100,000 "year" hurricane catalog. The standard catalog is a catalog that is based on the past 109 years of historical hurricane activity which includes multiple observations of each of these climatological signals and oscillations.

AIR has developed a WSST hurricane catalog which incorporates the impact of elevated sea surface temperatures (SSTs) in the North Atlantic on hurricane activity. Loss costs from this catalog are contained in Exhibit RB-7.

A correlation has been drawn between sea surface temperature and hurricane activity in the Atlantic basin. There is an increased probability of hurricane activity during warm periods, and a decreased probability of hurricane activity during cool periods. This correlation is logical because it is known as a matter of physics that warm sea surface temperatures provide the necessary "fuel" for hurricanes. As with many meteorological matters, this correlation is subject to uncertainty and continues to be an area of active research. The WSST Catalog is created by adjusting the frequency and severity of the Standard Catalog based on historical periods of known above-average sea surface temperature.

46. Q. Based on this information, what conclusions can be drawn about the probability of hurricane activity in the Atlantic basin in the coming years?

A. As noted above, we are currently in a period of above-average sea surface temperatures. If the warmer than average sea surface temperatures persist into the coming years, the Atlantic hurricane activity is likely to be elevated. While other cycles might oscillate to result in either an increased or decreased probability of hurricane activity from one season to the next, the SST varies over a much longer period of time and thus results in an overall increased probability of hurricane activity in the coming years.

47. Q. Is the AIR modeling methodology a sound and appropriate method of projecting the prospective hurricane losses used in the filing for dwelling insurance in North Carolina?

A. Yes. AIR's simulation methodology is based on mathematical/statistical models that represent real-world systems and documented science. As with all models, these representations are not exact; however simulation methodology is a far superior technique for estimating potential hurricane losses than reference to actual dollars of losses paid by insurance companies following hurricanes many years ago. The best approach is to consider the longest period of consistently maintained and reported meteorological data available and to use that data to establish the range and probability distributions of events that could occur. That is what AIR's model does.

AIR's standard hurricane catalog incorporates the best and longest period of data available, and analyses performed using this catalog yield the long run average wind loss for the modeled exposure set. AIR's WSST hurricane catalog also incorporates the best and longest period of data available, with modifiers applied to account for the impact of elevated sea surface temperatures on hurricane activity. Analyses performed using this catalog yield the average hurricane losses assuming the continuation of elevated sea surface temperatures.

48. Q. How does the AIR model simulate hurricanes affecting the U.S. and North Carolina?

A. For each simulated year, the model first determines the number of landfalls that occur during that year. In those years in which a landfall occurs, the landfall location is generated using a probability distribution for landfall location. Having simulated the location, values for landfall angle, forward speed, central pressure, radius of maximum wind, gradient wind reduction factor, and peak weighting factor are generated using probability distributions derived from historical data and meteorological knowledge. As the hurricane moves from its landfall location, the track of the hurricane is simulated using probability distributions derived from historical data and meteorological knowledge. As the hurricane moves from its landfall location, the track of the hurricane is simulated using a Markov procedure with transition probabilities estimated using historical data.

49. Q. How is hurricane frequency modeled?

A. The model uses a negative binomial distribution to generate the number of hurricane landfalls per year. Actual historical data from 1900-2008 is compared to the modeled distribution for the entire Gulf and East Coasts. The modeled distribution fits the historical data very closely. The average number of hurricanes per year making landfall in the U.S. is 1.8. However, considering that a storm may make more than one landfall, the average number of hurricane landfalls is 1.9. Since the negative binomial distribution models individual landfalls, it has a mean of 1.9.

50. Q. How is landfall location modeled?

A. For the United States, there are 62 potential landfall segments each representing 50 nautical miles of smoothed shoreline along the Gulf and East Coasts, including the Florida Keys. A cumulative distribution of landfall locations within each coastal boundary segment is used to estimate the probability of a hurricane landfall occurring at a point along a segment. Once a segment is chosen, the landfall location is drawn at random from a uniform distribution along that segment; that is, a storm can make landfall anywhere on that segment with equal probability. This gives us infinitely more landfall locations than the previous 3100 discrete landfall points.

51. Q. How is hurricane severity modeled?

A. The AIR hurricane model generates values for the severity variables. There are seven primary variables which account for hurricane severity. These variables are the minimum central pressure, the gradient wind reduction factor, the peak weighting factor, the radius of maximum winds, the forward speed, the angle at which the storm enters the coast, and the track of the storm once on shore. The most recent version of the model reflects new scientific findings as to these variables.

52. Q. What is the central pressure variable?

A. Central pressure is defined as the minimum atmospheric pressure measured in a hurricane. The central pressure distribution is based on the historical database and is determined for each 100-nautical-mile coastline segment, as well as for larger regional segments.

53. Q. What is meant by the radius of maximum winds?

A. The radius of maximum winds (Rmax) is the radial distance from the storm's center, or eye, to the radius where the highest cyclonic wind speeds occur. The radius distribution is based on the historical database and is dependent on the central pressure of the storm. The radius of maximum winds also varies after landfall.

54. Q. What are the gradient wind reduction and peak weighting factors?

A. These two factors are used to translate the flight-level winds to the land surface. The wind speed of a hurricane varies both with the lateral distance from the eye and the horizontal distance from the land surface. The gradient wind reduction factor varies by distance from the eye of the storm and translates the flight-level winds horizontally to the land surface. The peak weighting factor adjusts the gradient wind reduction factor for the vertical slant in the hurricane eye. These two factors are generated jointly for each modeled storm.

55. Q. What is forward speed?

A. Forward speed is the speed rate at which the center of a hurricane moves from point to point along its track. The forward speed distribution is based on the historical database and is determined for each 100-nautical-mile segment.

56. Q. Does the combination of forward speed and wind speed affect the damage caused by a given hurricane?

A. Yes, this is what is referred to as the "asymmetrical effect" of hurricane winds. Hurricane winds move in a counter clockwise direction around the eye of the hurricane, which means that winds on the right side of the hurricane are moving with the forward direction of the storm, thereby creating higher wind speeds at locations on the right side of the hurricane. Conversely, the wind speed at any given location on the left side of the storm is reduced by the combined effect of the hurricanes rotational winds moving in the opposite direction from the translational winds. The faster the forward speed of the hurricane, the greater are the effects of this asymmetry.

57. Q. What is the track angle at landfall?

A. Track angle at landfall is the angle between track direction and due north at landfall location.

58. Q. What is the storm track?

A. Storm track is the path the hurricane takes. AIR has developed a procedure to simulate storm tracks, which is described in more detail under question 65 below This procedure allows the tracks to curve and recurve in the same way and to the same extent that actual historical storms do.

59. Q. Does the latitude of the hurricane make a difference?

A. Yes. Hurricane intensity and frequency vary by latitude. In general, as latitude increases, average hurricane intensity decreases, and we model this effect accordingly. In general, water tends to be cooler in higher latitudes. When a hurricane moves over cooler waters, its primary source of energy (latent heat from warm water vapor) is reduced so that the intensity of circulation decreases in the absence of outside forces. For this reason, the parameters of the severity variable probability distributions were estimated separately for each of the thirty-one 100-mile coastal segments using state-of-the-art statistical techniques combined with published scientific information. Thus, the model reflects the fact that hurricanes tend to lose some of their intensity as they move north.

60. Q. How does the AIR model generate values for the distribution of hurricane central pressures?

A. The AIR hurricane model utilizes central pressure as the primary hurricane intensity variable. Based on the historical data, Weibull distributions are employed so that the parameters are estimated for each of the thirty-one 100-nautical-mile coastal segments, as well as for larger regional segments, with the final distribution being a mixture of the two. The Weibull form was selected based on “goodness-of-fit” tests with actual historical data. The use of the Weibull distribution for storm central pressure is documented in the scientific literature.

61. Q. How does the AIR model generate values for the radius of maximum winds?

A. The radius of maximum wind is simulated using a regression model that relates the mean radius to central pressure and latitude. The deviations from the mean in this model are simulated from a Normal distribution. The parameters are estimated using the least squares method, and standard diagnostic tests are used to evaluate the adequacy of the fit. The resulting values are bounded based on central pressure to produce a final distribution for the radius. The radius of maximum wind also varies after landfall, following an autoregressive model.

62. Q. How does the AIR model generate values for the gradient wind reduction factor and the peak weighting factor?

A. The model computes the maximum wind at upper levels and then brings this wind to the surface level (10 meters) via a conversion factor. This factor, called the gradient wind reduction factor, represents a model parameter which varies stochastically by storm. For a particular storm it varies by location as a function of the central pressure and distance from Rmax. The peak weighting factor adjusts the gradient wind reduction factor to reflect the vertical slant in the hurricane eye. The peak weighting factor and gradient wind reduction factor are generated jointly using a bounded bivariate normal distribution. These factors are reflected in the latest version of the model and are based on accepted meteorological studies and principles.

63. Q. How does the AIR model generate values for forward speed?

A. Probability distributions are estimated for forward speed for each 100-nautical-mile segment of coastline with bounds based on the historical record. Separate distributions are estimated for each of these segments to capture the dependence of this variable upon geographical location, particularly latitude. Forward speed is allowed to vary after landfall, according to an autoregressive model. The bounds on forward speed are latitude dependent; i.e., storms tend to pick up speed the further north they travel.

64. Q. How does the AIR model generate values for track angle at landfall?

A. Separate distributions are used for different 50-nautical-mile coastal segments to allow for variation in the coastal orientation of each segment. In the historical record, certain coastal segments seem to be characterized by bimodal track angles. To preserve consistency with the historical distribution, the track angle at landfall is modeled using a mixture of two normal distributions. That is, the track angle at landfall is drawn from the first normal distribution with probability p, or it is drawn from the second normal distribution with probability 1-p. The final distributions are bounded based on the historical record, the coastline orientation, geographical constraints, and meteorological expertise.

65. Q. How does the AIR model generate values for storm track?

A. The storm tracks are generated by successively drawing track direction and forward speed. AIR uses a Markov chain model with estimated transition matrices to simulate track direction. Our scientists have analyzed historical data on the tracks of more than 1,000 Atlantic tropical cyclones, both those that made landfall and those that did not. Using this data, AIR has created transition matrices from which successive track directions are generated. There are 16 primary directional probabilities. Within each primary direction there is a uniform, continuous probability distribution, resulting in an infinite number of potential track directions. For each of 16 directional probabilities of storm arrival, these matrices specify the probability of a directional change at each time step. Having determined the new track direction, the next track point is determined by drawing forward speed using a procedure that incorporates time series dependence between successive drawings. The methodology produces realistic tracks that resemble the full range of diverse storm tracks that have been observed historically across the Atlantic basin and the U.S. mainland.

In Version 11 of the AIR hurricane model, storms were terminated after the tracks evolved for 24 hours after making U.S. landfall. This meant that some storms were terminated prematurely despite the fact that their wind speeds still exceeded the potentially loss causing level of 40 mph. In Version 12 of the model, each storm was terminated only when its wind speed along the path decreased to below 40 mph. The number of storms causing loss in North Carolina has increased because of this change, but the dollar value of losses associated with this increased event persistence is not great.

It is also the case that a single landfalling hurricane may produce multiple landfalls or subsequent bypasses. A number of historical storms that have affected North Carolina fall into this category. Since the AIR model follows each simulated hurricane from inception until dissipation, multiple landfalls and bypassing hurricanes are included in the simulation. The simulated frequency of these events is consistent with their historical frequency by coastal region.

66. Q. How does the AIR model calculate maximum wind speeds?

A. Once values are obtained for all of the severity variables, the maximum sustained wind speed is calculated using generally accepted meteorological formulas. For each simulated event, the model simulates the storm's movement along its track. A complete time profile of wind speeds is developed for each location affected by the storm, thus capturing the effect of duration of wind on structures as well as peak wind speed. Calculations of local intensity take into account the effects of the asymmetric nature of the hurricane windfield, the effects of the storm "filling" or dissipating intensity over land, the directional effects of surface friction, the gustiness effects on surface friction, the wind speed and wave height, and the relative wind speeds as the distance from the radius of maximum winds increases.

In AIR's continuing effort to reflect scientific advancements, the most recent version of the model much more accurately reflects these factors. For instance, the latest version of the model computes the effects of land cover on windspeed explicitly by wind direction. In previous versions, the model assumed an average land cover and an average frictional effect, but as a result of the ability to geocode actual land cover characteristics, the model is much more precise. Thus, less deterioration of wind speeds occurs to storms that make landfall in areas that have nearby low dunes or sounds and other bodies of water, as opposed to areas that have tall trees, mountainous terrain or tall buildings. This change means that the model now more accurately reflects the deterioration of storms in various locations in North Carolina based on the actual land cover in those locations.

67. Q. You have explained how the AIR model generates values determining the frequency and severity of hurricanes. Now please explain how insured damages are computed?

A. AIR scientists and engineers have developed mathematical functions, called damageability relationships, which describe the interaction between buildings (both their structural and nonstructural components as well as their contents) and the local wind intensity to which they are exposed. Damageability functions have also been developed for estimating time element losses. These functions relate the mean damage level as well as the variability of damage to the measure of storm intensity at each location. Because different structural types (ex. frame or masonry) will experience different degrees of damage, the damageability relationships vary according to construction materials and occupancy. The AIR model estimates a complete distribution around the mean level of damage at a given intensity and structural type, and from there constructs an entire family of probability distributions. Losses are calculated by applying the appropriate damage function to the replacement value of the insured property.

The AIR damageability relationships incorporate the results of well-documented engineering studies, tests, and structural calculations. AIR engineers continually survey the engineering literature and state and/or regional building codes and consult with other experienced engineers to verify our damage functions, and if necessary, they refine these relationships. AIR also performs post-disaster field surveys and analysis for all U.S. landfalling hurricanes. AIR has analyzed billions of dollars of actual claims data from recent hurricanes in order to validate damageability relationships in the model. Much of the loss data is by zip code, coverage, and construction.

68. Q. How often has the AIR model been updated and refined since it was originally created?

A. The AIR hurricane model was first developed in 1985. Since that time the model has typically been updated each year. At a minimum, the zip code database has been updated each year since the model was developed. For each new zip code centroid, the following are re-estimated: distance from coastline, elevation, surface terrain, and any other special topographical features. As new data and research about hurricanes becomes available, it is also added to the model. The probability distributions for all of the meteorological variables have been re-computed approximately every two or three years to reflect additional years of new hurricane experience. Damageability relationships have been continually reviewed and validated as actual hurricanes have occurred and new loss data has become available.

Other revisions to the model represent one-time refinements to various model components, and these typically are undertaken when new data or research becomes available. AIR prides itself on keeping up with the newest developments of science.

During the period of 2009-2010 there was a major and comprehensive update of a number of components of the model to reflect new data and research, and these updates are described in detail throughout this testimony. This update represents the most recent of the ongoing model update efforts.

69. Q. Has the AIR model been independently peer reviewed?

A. Yes, it has been extensively peer reviewed by independent scientists since it was first created, and it has been subject to periodic peer review thereafter. Independent reviews of the model have been conducted by experts in the fields of meteorology, engineering, computer science, insurance, statistics, and finance. As a result of this review and scrutiny, it is correct to state that the AIR hurricane model has been extensively vetted by outside parties. Meteorological components of the model were reviewed in 1986, 1994 and 2010. The derivation and application of vulnerability functions used in the model have undergone independent review for each of the past ten years, particularly following hurricane loss reports becoming available. Computer science reviews have been conducted in each of the past four years to validate that AIR's modeling software complies with the standards of the Florida Commission on Hurricane Loss Projection Methodology.

A particularly detailed and thorough peer review of all aspects of the model occurred in connection with the changes that were introduced in 2010 in version 12 of the model. That version was used for the reports that have been provided to the Rate Bureau for use in this filing.

70. Q. Who has done the peer review?

A. As described below, over many years, the AIR model has undergone extensive external review by independent scientists, and it has been examined in scientific literature. It has also been reviewed in depth by rating agencies and by state insurance departments.

During 1996 and 1997, Duff & Phelps, Fitch, Moody's and Standard & Poors all reviewed AIR's hurricane model in conjunction with their rating of the USAA catastrophe bond. Additionally, in conjunction with catastrophe bond issuances since 1996, rating agencies have performed peer reviews of the model and modeled losses.

The following are independent peer reviews that have been performed, broken down by the components of the AIR model. As will be noted, peer review has been particularly extensive as to the most recent changes that are reflected in version 12 of the model that has been used in this filing.

Meteorology – The meteorology component of the model was reviewed by by Dr. Kerry Emanuel, Dr. Peter Black, and Dr. Robb Contreras in 2010.

Dr. Black has spent 40 years conducting hurricane research at NOAA's Hurricane Research Division as a research meteorologist using observations provided by aircraft and satellite platforms. Among many other accomplishments, Dr. Black has been a lead project scientist on various NOAA research aircraft, involving over 400 hurricane eye penetrations in 300 hurricane flights, and has been responsible for conducting investigations of the hurricane boundary layer structure, ocean response to a hurricane, microwave remote sensing of surface winds, hurricane convective clusters, and most recently, hurricane air-sea interaction processes.

Dr. Contreras has spent fourteen years in research and academic departments such as University of Massachusetts, Amherst, University of Washington, Seattle and UC San Diego. Recently Dr. Contreras has worked as a scientist to implement physical models of signatures, environments, and sensors based on first principles. He has developed physics-based algorithms for robust detection and tracking.

Dr. Kerry A. Emanuel has been a professor at Massachusetts Institute of Technology since 1997 in both the Program in Atmospheres, Oceans, and Climate and the Center for Meteorology and Physical Oceanography, where he was also the director for eight years. Dr. Emanuel has received numerous awards including The Carl-Gustaf Rossby Research Medal and the Louis J. Battan Author's Award, American Meteorological Society from the American Meteorological Society in 2007.

The WSST catalog generation process has also been reviewed by well-respected meteorological experts. The research used to develop the WSST catalog was peer reviewed and published in the American Meteorological Society's *Journal of Applied Meteorology and Climatology*. The WSST catalog generation process was also reviewed by Dr. Kerry Emanuel of MIT, Dr. James Elsner of Florida State University, and Dr. Timothy Hall of the NASA Goddard Institute for Space Studies.

Vulnerability - The vulnerability functions have been reviewed by Dr. Joseph Minor, P.E. in 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009, and by Dr. Carol Friedland and Dr. Marc Levitan in 2010.

Dr. Friedland has been engaged in wind and hurricane engineering research, practice, and education for seven years and in civil engineering and construction for the past twelve years. She is an Assistant Professor in the Department of Construction Management and Industrial Engineering at Louisiana State University. She has been a registered professional engineer since 2003. She has studied wind and hurricane effects on buildings and structures through structural analysis and post-storm investigations. Recent field investigations include documenting performance of buildings and other structures after Hurricanes Gustav, Ike, Katrina, and Ivan.

Dr. Marc Levitan has been actively engaged in wind and hurricane engineering research, practice, and education for 25 years. He is an Associate Professor in the Department of Civil and Environmental Engineering at Louisiana State University. He was the driving force behind the creation of the LSU Hurricane Center. Under his direction for a period of 10 years, that Center became one of the premiere interdisciplinary research facilities, addressing hurricanes and other natural hazards and their impacts on the natural, built, and human environments. He has provided national leadership through: chairing national technical and policy committees; chairing national and international conferences and workshops; serving as President of the American Association for Wind Engineering, and testifying a number of times before Congress and in state legislatures on topics related to wind and hurricane hazards and mitigation. He has several dozen publications in journals, conference proceedings, and other venues.

Computer Science - The software engineering components of the model have undergone independent peer review by Dr. Mark Wolfskehl in 2002, Dr. John Kam in 2003, 2004 and 2005, and by Narges Pourghasemi in 2006, 2007, 2008 and 2010.

Ms. Narges Pourghasemi has been an independent software consultant for the past seven years. She has extensive experience in software engineering, development and testing.

Actuarial - The model underwent an actuarial review in 2010 by John Rollins, FCAS, MAAA.

Mr. Rollins is an experienced actuary. His qualifications include twenty years of property and casualty insurance experience in a variety of positions including a leading catastrophe modeling firm, Florida voluntary and residual market property insurers, global consulting and software firms, and advisory organizations. He has the highest actuarial qualifications, and has extensive authorship and speaking experience.

71. Q. What are some of the various types of reviews that have been performed and what were the purposes for those different types of reviews?

A. An example of the testing conducted by rating agencies is the review by Duff & Phelps, Fitch, Moody's and Standard & Poors in 1996. This review was particularly extensive because the USAA catastrophe bond was the first such bond to be assigned a corporate bond rating by all four agencies. The probabilistic estimates derived from the AIR hurricane model were the primary bases for the assigned ratings. Over a period of 18 months, AIR staff met with employees and consultants hired by the rating agencies representing many fields, including insurance, statistics, and finance, to explain the AIR hurricane model in extensive detail. In addition, a number of sensitivity analyses and stress tests were performed at the request of the rating agencies during this period of time. These tests, performed by outside experts whose primary interest was the protection of their investors, confirmed the robustness of the AIR model. Moody's wrote: "Moody's did not simply accept AIR's modeling results at face value. Rather, we followed an examination and calibration procedure, aiming to provide Moody's with a high degree of confidence in the reliability and stability of the simulation results." Similarly, Fitch wrote in approving the model: "Fitch evaluated the underlying technical integrity of the AIR model on the basis of model specification and model structure." Because of the first-time nature of such a large catastrophe bond issuance, the rating agencies very carefully scrutinized model assumptions, data, and methodology. These rating agencies have continued their scrutiny of the model in the course of several subsequent catastrophe bond transactions.

The meteorology review conducted by Drs. Black, Contreras and Emanuel was an in-depth review of all aspects of the updated wind field component of the model. The updates to this component were extensive, so the peer review was conducted in an iterative fashion. First, AIR met with the peer reviewers in May, 2009 to report on data, methodology, and model updates. The reviewers provided feedback and suggestions for additional research and validation. After six months, AIR provided feedback and additional analyses, as requested, and the reviewers provided overall assessment, additional feedback, and a final report.

Dr. Friedman and Dr. Levitan examined all aspects of the updates to the vulnerability component of the model. Specifically, they reviewed the derivation of vulnerability functions as well as the Individual Risk Model. The Individual Risk Model is a component of the AIR hurricane model which allows for consideration of a range of specific and known mitigation measures through modification functions, which vary with wind speed. The review included on-site visits where the peer reviewers had access to the model as well as internal research results and documentation.

The actuarial review encompassed the text, charts and tables of AIR's submission to the Florida Commission on Hurricane Loss Projection Methodology, including all "Forms" containing detailed model outputs, and was directed toward ensuring accuracy of input data, proper calculation logic for completing forms and other quantitative responses, formatting and clarity of output, and accuracy of statements made. The Commission's requirements as in its Report of Activities was the guidepost for the review, and the submission was reviewed for compliance with those requirements. All subsequent correspondence between the Commission and delegates and AIR was reviewed as well, and the actuary attended all public hearings concerning the AIR model.

Ms. Pourghasemi reviewed AIR's model to ensure that the software complies with the software standards and requirements established by the Florida Commission on Hurricane Loss Projection Methodology, as well as current industry-standard software engineering practices.

72. Q. What information did you provide the reviewers about your methodology?

A. In the review of the AIR model in 1996 and 1997 by the bond rating companies, review took place as to the probability distributions used by AIR and the estimation methods employed to fit the parameters of those distributions. Also reviewed were the mathematical functions used in the model to estimate the interactions between simulated storm parameters. For the validation testing and sensitivity analysis, the rating companies reviewed model output under various distributional assumptions.

For the meteorology review in 2010, we provided Drs. Emmanuel, Black and Contreras the data sources, the references of data and the published research used, as well as detailed explanations of the actual implementation which AIR scientists used to develop and/or update the model. The review was conducted iteratively so that suggestions and feedback from the peer reviewers early on was incorporated in subsequent model updates.

For their review of the vulnerability component of the model in 2010, Drs. Friedland and Levitan were provided the Florida Commission on Hurricane Loss Projection Methodology vulnerability standard submissions and comprehensive detail on all changes to the vulnerability component of the model. The peer review team was given an extensive review of the damage functions and research used in the development of those functions.

The computer science peer reviewers were provided information on the software development and testing processes, including insights into the software and underlying code to ensure that the software complies with the software standards and requirements established by the Florida Commission on Hurricane Loss Projection Methodology, as well as current industry-standard software engineering practices.

AIR provided the 2010 actuarial peer reviewer model software, input data, output files, and workpapers used in assembling the response document and forms for the Florida Commission. The review proceeded step by step based on these items.

73. Q. You have mentioned that the AIR model has been reviewed by the Florida Commission on Hurricane Loss Projection Methodology. Please describe what that commission is and what AIR has been done in connection with that Commission.

A. The Florida Commission on Hurricane Loss Projection Methodology was established in 1995 by the Florida legislature with the mission to "assess the effectiveness of various methodologies that have the potential for improving the accuracy of projecting insured Florida losses resulting from hurricanes and to adopt findings regarding the accuracy or reliability of these methodologies for use in residential rate filings." The Commission has established 37 standards that need to be met before a catastrophe model is acceptable for ratemaking purposes in the state of Florida. The AIR hurricane model was the only model approved under the 1996 standards, and it has consistently been approved under the standards in every subsequent year.

In addition, AIR has been working with insurance departments in other states for a number of years in meeting their informational requirements. Rates based on the AIR model have been filed and approved in an increasing number of states. For instance, representatives of the North Carolina Insurance Department have visited AIR at its headquarters in Boston on more than one occasion. AIR provided information to a consulting meteorologist retained by that Department in 1993. Also, several years later AIR provided extensive information to a professor of mathematics hired by the Department to review AIR's methodology and algorithms. AIR has similarly worked with other state insurance departments.

74. Q. What sorts of specialists comprise the Florida Commission's professional team?

A. The Florida Commission professional team includes two persons from each of the following professions: actuary, computer scientist, statistician, structural engineer, and meteorologist.

75. Q. Does AIR have staff meteorologists, wind engineers, actuaries and software engineers?

A. Yes, as discussed above, AIR has numerous staff meteorologists, wind engineers, actuaries and software engineers.

76. Q. Has AIR internally validated the model on a continuing basis?

A. AIR scientists and engineers validate the model at every stage of development. We compare model results with actual data from historical events. We ascertain that the simulated event characteristics parallel patterns observed in the historical record and that resulting loss estimates correspond closely to actual claims data provided by clients. Internal peer review is a standard operating procedure and is conducted by the AIR professional staff of scientists and engineers

77. What were the main model updates in the past 5 years prior to the extensive updates in 2009-2010 that are reflected in version 12 of the model?

A. In the last dwelling filing in 1996 version 7 of the AIR model was used. This filing uses version 12. The main updates to the model from 2006 to the extensive changes in version 12 are detailed below:

2006:

- Refinements to the distribution governing the radius of maximum winds to allow for larger radii for intense hurricanes based on observations in actual hurricanes
- Enhancements to the storm surge model
- Updates to the wind damage functions to incorporate findings as to claims data and post-disaster survey findings
- Updates to the demand surge function to reflect findings from the 2004 and 2005 hurricane seasons

2007:

- Updates to the historical storm set to include storms through 2006
- Revision of the bounds on the distribution governing central pressure in the northeast
- Refinements to the distributions governing the day of hurricane landfall
- Refinements to the damage functions for residential contents
- Updates to secondary risk modifiers for pool enclosures, based on claims data
- Enhancements to the business interruption damage function
- Updates to the demand surge function
- Update to the WSST catalog

2008:

- Updates to ZIP Code databases and population-weighted centroids
- Updates to the historical storm set to incorporate track information from hurricanes through 2007
- Updates to the stochastic catalog, including annual frequency, landfall location and intensity probability distributions.
- Refinements to the inland decay functions

2009:

- Updates to ZIP Code databases and population-weighted centroids
- Updates to the historical storm set to incorporate track information from hurricanes through 2008 for Florida and adjacent states

78. Q You have mentioned on several occasions in your testimony that AIR made extensive, peer reviewed improvements to the model in 2009-2010 that are reflected in version 12 of the model that was introduced in 2010 and that is used by the Rate Bureau in this filing. Please explain those updates and their general effects on prospective loss costs in North Carolina.

A. The AIR hurricane model for the U.S. has long been considered the industry standard. To maintain that position, the model must reflect the latest science and engineering research, and take into account recent loss experience. In 2009 AIR noted that a number of scientific studies of hurricanes had advanced the knowledge of hurricanes significantly in the preceding several years. AIR decided to incorporate numerous scientific advances in the hurricane model. I participated in the review of these advancements and in their incorporation into the model. We also decided that because numerous changes were being considered, we should have the changes peer reviewed by independent experts. The changes for 2010 include the following:

- Updates to ZIP Code databases and population-weighted centroids. These updates did not in themselves cause significant changes in loss costs in North Carolina, but it should be noted that for the first time in this filing the Rate Bureau was able to provide exposure data by zip code to AIR. The provision of exposure data by zip code significantly improved the precision of AIR loss costs.
- Updates to the historical storm set to incorporate information from the HURDAT database as of June 2009. The review of this database, which covers the period 1900-2008, showed the existence of three additional hurricanes that affected North Carolina. The addition of these three storms to the data base increased the modeled frequency of North Carolina storms. However, since these three historical storms were relatively weak, they did not have a significant impact on the frequency of major hurricanes in the simulation.
- Update to the model's wind field formulation incorporating the latest available data and scientific literature, including the latest research on the radial decay of winds from the eyewall to the storm's periphery and the conversion of surface winds from winds aloft. Among the changes to the model was the fact that storms were no longer arbitrarily ended 24 hours after landfall. This meant that more storms that made landfall to the south of North Carolina (such as in the Gulf of Mexico or Florida) were extended to reflect the generally modest losses that such storms cause in North Carolina more than 24 hours after landfall.
- As explained earlier, new data that was available from satellites as to ground cover was incorporated in the wind field calculations in version 12. This inclusion meant that areas such as the sounds of North Carolina were no longer assumed to have caused storms to dissipate to the same extent as in past model runs for North Carolina. On the other hand, this change reduces wind speeds in

areas of North Carolina with extensive tree cover to reflect the fact that trees reduce wind speeds as storms travel over land.

- Updates to the wind damage functions based on the latest findings from AIR's ongoing analysis of detailed claims data from recent hurricane seasons. Region-specific "unknown" damage functions were based on AIR's detailed industry exposure database.
- Introduction and updates to the "year built" (age of home) bands that capture the evolution of building codes, changes in construction practices and materials, and other factors affecting vulnerability over time.
- Enhancements to individual risk modifiers (secondary risk characteristics) to reflect newly acquired data and analysis.

79. Q. Could you please explain the 2010 changes to the wind field and vulnerability components of the model in greater detail?

A. Recent research in atmospheric science has enabled wind modeling with unprecedented fidelity and accuracy. Improved knowledge of the full 4-D structure of hurricanes— from the temporal evolution of the storm footprint, to the radial wind profile, to the vertical relationship between winds aloft and winds at the surface—was in 2010 integrated into the model to more accurately estimate wind speeds and their distribution.

On the engineering front, the 2010 updates to the model reflect new findings from recent loss experience data, wind engineering studies and damage surveys. The model incorporates the results of a new and exhaustive analysis of the evolution and enforcement of building codes across all states and their impact (as a continuous function of time after the 1990s) on the existing building inventory.

The additional level of detail in both the hazard and vulnerability components of the model enables better differentiation between risks. This differentiation applies to both the location and the structural attributes of properties.

80. Q. As relates to this filing, did AIR receive exposure data from Insurance Services Office on which AIR relied in preparing its analyses?

A. Yes, we received data reflecting the number of earned house years and earned insurance years for 2007 for dwelling policies in North Carolina. It was broken down by categories (Voluntary, FAIR Plan and Beach Plan), policy form (Form 1 and Form 2), zip code, coverage (building or contents), construction class, and current dwelling territory. It was furnished to AIR by Insurance Services Office (ISO) which had compiled the data. AIR routinely receives and relies upon data of this type in the ordinary course of its business of modeling and did so in this instance. AIR also reviews such data submissions for consistency and accuracy and notifies the producer of such data if there are questions as to the data.

81. Q. What use did you make of such data?

A. For each territory, category, policy form, ZIP code, coverage and construction class, the insurance years were used as the primary insured value (either the building value for the Dwelling Form 1 records or the contents value for the Dwelling Form 2 records). Appropriate adjustments were then applied to account for non-primary coverages (appurtenant structures and time element in the case of the building coverages, and time element for the contents coverages). Appropriate assumptions were also applied to account for deductibles.

The data was then analyzed in AIR's CLASIC/2™ software application using the model and catalogs referenced previously in order to yield loss estimates. These loss estimates were rolled up to the territory level for reporting purposes.

82. Q. What are the areas of the state with the highest hurricane frequency in North Carolina?

A. The figures show that the higher risk areas are the beach and coastal zones. The hurricane is typically at its maximum force in those areas just as it crosses over land. As it travels inland, the storm dissipates because of the elimination of its primary energy source (heat and moisture from the sea) and because of surface frictional effects.

83. Q. As between portions of the coast of North Carolina, which areas experience the greatest hurricane frequency?

A. The highest frequency of hurricanes occurs in a 100-mile segment which includes Cape Lookout, Cape Hatteras, and Pamlico Sound. The coastline in this area juts out into the Atlantic Ocean where it is exposed as storms move up the coastline. The far northern coast towards Virginia suffers relatively few hurricane landfalls because of the westerly orientation of the coastline in this region.

84. Q. Have you examined North Carolina's building code?

A. Yes. AIR engineering experts have undertaken an extensive, peer-reviewed study to understand the large number of building codes and wind standards that exist in hurricane-prone states including North Carolina. In addition to major code changes, there are continuous changes in vulnerability due to changes in building materials, enforcement, structural aging and upgrading. The model accounts for the spatial and temporal variations in vulnerability for all hurricane states including North Carolina.

85. Q. Are there any changes that you have made to your model just for North Carolina?

A. No. AIR has an integrated U.S. hurricane model which reflects historical regional differences in hurricane risk. In the model development and validation process, North Carolina is treated in the same way as all other states in determining regional variations in vulnerability through examination of regional building codes. The model version and settings used for North Carolina were the same as those accepted by the Florida Commission on Hurricane Loss Projection Methodologies.

Each state's prospective losses are computed individually. For instance, Florida has higher loss costs than North Carolina because it has a greater exposure to hurricanes than North Carolina, but those higher losses in Florida do not in turn make expected loss costs higher in North Carolina than they otherwise should be.

The model version and settings used for North Carolina were the same as that accepted by the Florida Commission on Hurricane Loss Projection Methodology. Although the model can take into consideration the effects of storm surge and construction modification (individual building characteristics), these components of the model were not employed at the direction of the Rate Bureau. Taking into effect the results of storm surge refers to the fact that some surge claims are paid as hurricane loss as they cannot be distinguished in the claim settlement process. While this phenomenon occurs and can be modeled, the Rate Bureau chose not to do so.

86. Q. What is demand surge and how is it calculated in the AIR model?

A. The results were provided with aggregate demand surge as directed by the Rate Bureau. Demand surge according to actuarial standards is defined as a sudden and usually temporary increase in the cost of materials, services and labor due to the increased demand for them following a catastrophe. Historical evidence from major catastrophic events in past 15 years suggests that, after a major event, increased demand for materials and services to repair and rebuild damaged property can put pressure on prices, resulting in temporary inflation. This phenomenon is often referred to as demand surge and it results in increased losses to the insurers.

After Hurricane Andrew in 1992, AIR developed a rudimentary demand surge function to allow companies the capability to assess the potential impact on losses due to demand surge. In order to develop a default demand surge function AIR reviewed several studies on the impact on prices of material and labor after Hurricane Andrew and the Northridge Earthquake. It was commonly accepted that the demand surge from a Hurricane Andrew sized event ($15.5 billion) was 8-12 %.

AIR continues to review the impact that catastrophic events have had on material and labor prices. We have found that Hurricane Hugo, for example, had a significant temporary impact on personal incomes in the construction industry in South Carolina. Analyses performed after the 2004 hurricane season in Florida revealed that demand surge had a significant impact on insured losses. Specifically, empirical data reveals that roof rebuilding costs increased substantially in the period following the hurricane season, and losses resulting from the Additional Living Expense provisions in the policy (sometimes referred to as the "time element" coverage) were significantly impacted due to the amount of time it took to repair damages from the multiple events.

87. Q. Was demand surge used for the analyses you performed for the NCRB?

A. Yes, demand surge was used for both analyses (standard and WSST).

88. Q. How is the demand surge factor calculated, and how is it applied?

A. Demand surge effects do not occur following every hurricane. Small hurricane events are not accompanied by demand surge. AIR’s demand surge function relates the level of demand surge to the amount of industry loss. Each event is assigned demand surge factors by coverage based on the amount of industry loss caused by the given event, as well as by other events that occur close to the given event in both time and space. AIR’s demand surge begins at an industry loss amount of $5.5 billion. The factors are applied to losses from the specific exposure set to calculate the loss with demand surge.

89. Q. Now let me ask you several questions concerning Exhibit RB-6 to your prefiled testimony. What is the significance of the figure from the column called "Loss Cost (Per 100)" on page 14 of Exhibit RB-6?

A. The figures show the estimated loss costs per $100 of exposure, including contents and all other coverages.

90. Q. On page 7 of Exhibit RB-6 entitled "Exposure Information and Assumptions,” there is reference to “insurance-years by category, ZIP code, line of business, construction class, and territory." Please explain to what these terms refer.

A. The term insurance-years refers to the insured values under dwelling policies. The source of this data is ISO. The data were provided by each of the elements listed. Category refers to the categories of Voluntary, FAIR Plan and Beach Plan. The line of business refers to either Building or Contents policies. The construction classes provided are Frame, Masonry, Masonry Veneer, Superior, Aluminum Plastic siding over frame, and Mobile Homes.

91. Q. On the same page there is reference to "Beach Split ZIP Codes.” Please explain this term and its relevance to the modeled losses contained in Exhibit RB-6.

A. A "Beach Split ZIP Code" is a zip code which is split between two different Rate Bureau territories, and one of the territories intersecting the zip code is categorized as a beach territory. The Beach Split ZIP Code treatment is used to improve the modeled loss estimates for coastal territories in those situations. AIR's determination of prospective loss costs is more accurate as a result of implementing this treatment.

First it is important to understand how the model works with respect to the geographic placement of risks. When a risk is analyzed in CLASIC/2, its geocode placement determines the relative severity of each simulated event. Items such as elevation, proximity to the coast and soil conditions are determined based on the geocode coordinates assigned to the location. If a risk contains only zip code information rather than address information, CLASIC/2 will assign geocode coordinates corresponding to the zip code centroid and will use the average physical characteristics for the zip code to estimate loss.

The information provided to AIR for the Rate Bureau analysis is at the zip code level. In several instances coastal area zip codes fall across the boundary between the Beach territory (i.e. Territory 7 or 8 following territorial redefinitions) and the inland territories (Territory 48, 49 or 52 following territorial redefinitions). In these cases modeled loss costs for the zip code would be the same whether the territory was beach or inland, when in reality, those houses located closer to the coast should have higher loss costs than equivalent exposures inland, and vice versa. The Beach Split ZIP Code treatment improves the modeled loss estimates for these zip codes by distributing the risks to uniform grid points across the area of the zip code falling in each of the territories. In so doing greater accuracy and fairness are promoted.

92. Q. Beginning on page 8 of your Exhibit RB-6, there are shown insured values by territory. What is the source of your data on this exhibit?

A. The exposure by pre-existing territory and zip code was provided by ISO. It was updated to reflect the revised territories based on a file provided by the NCRB relating pre-existing territories and zip codes to the revised territories.

93. Q. Page 11 of your Exhibit RB-6 shows the average annual aggregate losses by territory. What is source of the data on these exhibits?

A. The average annual aggregate loss is the sum of all losses caused by all simulated events, divided by the number of simulation years. It represents the long run average annual hurricane loss potential by territory. As can be seen, the territory with the highest average annual aggregate loss is territory 8. This fact is a function of the number of dwelling policies in that territory and its exposure to hurricanes.

94. Q. What is the source of the data on page 12 of Exhibit RB-6?

A. Exhibit 1 and Exhibit 3.

95. Q. What does Exhibit 4 on page 12 of Exhibit RB-6 show?

A. It shows the distribution of exposures and average annual losses by territory. Obviously, coastal territories account for a much higher percentage of losses than exposures because of their vulnerability to hurricanes. For instance, Exhibit 4 demonstrates that territory 60 has 21.12% of the statewide insurance in force, but accounts for only 1.41% of total annual hurricane losses. Territory7, on the other hand, accounts for only 9.55% of insurance in force, but its average annual hurricane loss is 28.66% of the statewide total.

96. Q. What is the source of the data on page 14 of Exhibit RB-6?

A. Exhibit 1 and Exhibit 3.

97. Q. What does Exhibit 5 on page 14 of Exhibit RB-6 show?

A. It shows the estimated hurricane pure premiums and loss costs, per $100 of exposure, by territory. As can be seen from these exhibits, loss costs are highest in territories 7, 8, 48, 49 and 52.

98. Q. On page 14 of Exhibit RB-6, please explain the significance of the number “826.20” for territory 7 in the column entitled "Pure Premium."

A. The number $826.20 is the amount, exclusive of expenses and provisions for profit and contingencies, that on average needs to be collected each year to cover the long run average hurricane loss potential on each risk on dwelling policies in territory 7. This number is based on 2007 values. By comparison, only $8.42 needs to be collected to cover that same potential in territory 60.

99. Q. Do the explanations set forth above for Exhibit RB-6 also follow for similar pages in Exhibit RB-7?

A. Yes. The explanations follow the same format. The loss costs and pure premiums in Exhibit RB-7 reflect those appropriate to the view of risk that incorporates the impact of elevated sea surface temperatures (SSTs) in the North Atlantic on hurricane activity.

100. Q. Are the data, information and numbers used in your model true and accurate to the best of your knowledge, information and belief?

A. Yes. The AIR research team collects the available scientific data pertaining to the meteorological variables critical to the characterization of hurricanes and therefore to the simulation process. Data sources used in the development of the AIR hurricane model include the most complete databases available from various agencies of the National Weather Service, including the National Hurricane Center. All data is cross-verified. If data from different sources conflict, a detailed analysis and the use of expert judgment is applied to prepare the data for modeling purposes. Furthermore, to the extent possible, we cross-check and verify the numbers that go into the AIR model as well as the numbers that come out of the model. To the best of my knowledge, information and belief, the data that we use are the most reliable and accurate data that is publicly available.

101. Q. Are both Exhibits RB-6 and RB-7 to your prefiled testimony true and accurate to the best of your knowledge, information and belief?

A. Yes.

102. Q. Do you have an opinion as to whether your model is a reasonable method of projecting the prospective hurricane losses used in the filing to set rates for dwelling

insurance in North Carolina that are not excessive, inadequate or unfairly discriminatory, and if so what is that opinion?

A. Yes, I have an opinion. It is a reasonable, consistent, and reliable method of doing so. The prospective hurricane losses in the AIR reports and used in the filing are reasonable and appropriate projections of insured hurricane losses on the policy forms reviewed.

Catastrophe Loss Analysis Service
Atlantic Tropical Cyclone

Prepared for: North Carolina Rate Bureau
2010

AIR WORLDWIDE

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Table of Contents

Introduction

This report contains the results of the Catastrophe Loss Analysis Service (CLAS™) for Dwelling policies in the state of North Carolina as requested by the North Carolina Rate Bureau (NCRB). Loss estimates are provided using AIR Worldwide's (AIR) Atlantic Tropical Cyclone model.

The NCRB provided AIR with information that represents the exposures analyzed. AIR reviewed and reformatted the exposure data as necessary and used them as input to the AIR hurricane model, which generated the loss estimates that form the core of this analysis. The AIR model is a system of computer programs that incorporate the fundamental physical characteristics, expressed mathematically, of hurricanes. These characteristics are then overlaid on the geographical distribution of the NCRB's exposures. Building, contents, and time element damage are estimated by applying AIR's proprietary damageability relationships. Finally, insured losses are calculated by applying policy conditions to the total damage estimates.

The AIR model simulated 100,000 years of potential hurricane experience. The results of the model are expressed in terms of probability distributions of event losses. These distributions represent a range of possible losses and the relative likelihood of occurrence of various levels of loss.

All aspects of the AIR hurricane model undergo extensive validation tests. The stochastic model variables have been compared to the actual characteristics of historical hurricanes occurring in North Carolina since 1900. The simulated event characteristics parallel patterns seen in the historical record, and resulting loss estimates correspond closely to actual claims data provided by clients.

The model has also undergone extensive internal and external peer review. Internal peer review is a standard part of AIR's operating process and is conducted by AIR's technical staff of over 200 professionals, over 30 of whom hold Ph.D. credentials in their fields of expertise. The AIR hurricane model has also undergone extensive external review, beginning with Dr. Walter Lyons' systematic review in 1986. Dr. Lyons, a Certified Consulting Meteorologist, was contracted by the E.W. Blanch Company. A further independent review was conducted by engineer Dr. Joseph E. Minor. During 1996 and 1997, Duff & Phelps, Fitch, Moody's and Standard & Poors reviewed all aspects of AIR's hurricane model in conjunction with their rating of the USAA catastrophe bond.

Probably the most extensive peer review of the AIR hurricane model has been conducted by the Florida Commission on Hurricane Loss Projection Methodology (FCHLPM). The FCHLPM was established in 1995 with the mission to "assess the effectiveness of various methodologies that have the potential for improving the accuracy of projecting insured Florida losses resulting from hurricanes and to adopt findings regarding the accuracy or reliability of these methodologies for use in residential rate filings." The Commission has established more than 40 standards that need to be met before a catastrophe model is acceptable for ratemaking purposes in the state of Florida. The AIR hurricane model has been reviewed and has met the standards of the Commission annually since 1996.

Catastrophe modeling has become widely used and accepted. AIR was the first organization to have its model approved under the rigorous standards of the Florida Hurricane Commission. AIR's simulation methodology is a robust technique for estimating potential hurricane losses. It is based on mathematical/statistical models that represent real-world systems. As with all models, these representations are not intended to represent specific prior or future events.

The hurricane model used in this report is Atlantic Tropical Cyclone v.12.00.1224, as implemented in CLASIC/2 V12.0.4.

Executive Summary

To estimate the hurricane loss potential for NCRB, AIR simulated 100,000 years of potential hurricanes. The simulation included aggregate demand surge, which is demand surge caused by a given event as well as by other events that occur close to the given event in both time and space.

The long-term average annual aggregate hurricane loss for the NCRB Dwelling policies is $76.4 million including aggregate demand surge. In the 100,000-year sample, 58,097 hurricanes resulted in losses to North Carolina's insured properties net of deductibles. Given that a hurricane has occurred, the estimated average hurricane loss is $131.5 million.

The largest simulated hurricane loss is $6.9 billion including aggregate demand surge. This loss resulted from a category 4 hurricane with landfall in Brunswick County, North Carolina. Note that higher occurrence losses, that is, losses in excess of $6.9 billion, are possible. They have, however, a very low probability of occurrence. Nevertheless, it should be understood that the largest simulated hurricane losses do not represent the worst possible scenarios.

Hurricane events of specified probabilities of exceedance and estimated return times appear below.

Annual Maximum Occurrence Loss

Hurricane Occurrence Loss ($millions)	Estimated Probability of Exceedance	Estimated Average Return Time (years)
161	10%	10
378	5%	20
832	2%	50
1,291	1%	100
1,926	0.4%	250
2,471	0.2%	500
3,075	0.1%	1000

Actual hurricane losses are influenced by a number of characteristics, the most important of which is intensity as measured by wind speed, commonly expressed in terms of Saffir-Simpson (SS) category. Given the same landfall point, storms with higher wind speeds typically result in larger losses than do storms with lower wind speeds. Other characteristics that influence loss amounts include radius of maximum winds, forward speed, and storm track.

Actual losses also depend on the geographical distribution of exposures in relation to the area affected by the storm. That is, a severe hurricane could result in a smaller overall loss than a less severe hurricane if the less severe hurricane strikes an area of higher property value.

Exposure Information and Assumptions

The NCRB provided exposure information used to generate the loss estimates. The exposure file contained information on number of risks, coverage amounts of insurance and construction class by Statistical Plan category (Voluntary, FAIR Plan or Beach Plan), ZIP Code, line of business, coverage form and by pre-existing NCRB territory. They also provided a mapping file associating these territories and ZIP Codes to revised territory definitions. This enabled AIR to produce results based upon these revised territories.

When a zip code is split between two territories, and one of the territories intersecting the zip code is categorized as a beach territory, the ZIP is considered a 'Beach Split ZIP'. For 'Beach Split ZIP Codes' the exposure is distributed to uniform grid points across the area of the zip code falling in each of the territories.

The information on house-years and insurance-years by category, ZIP Code, line of business, construction class, and territory was provided by the Insurance Services Office (ISO) and represents the Full Statistical Plan experience of companies reporting to either ISO or the National Association of Independent Insurers.

In order to be consistent with the level of coverage provided by NCRB forms, the insurance years provided by NCRB for Form 2 were increased by 20% for Buildings to reflect non-primary coverage for other structures and loss of use.

An original data set was provided by ISO and analyzed by AIR in order to yield loss estimates. Exhibit 1 shows total insured values, number of risks, and average values by territory.

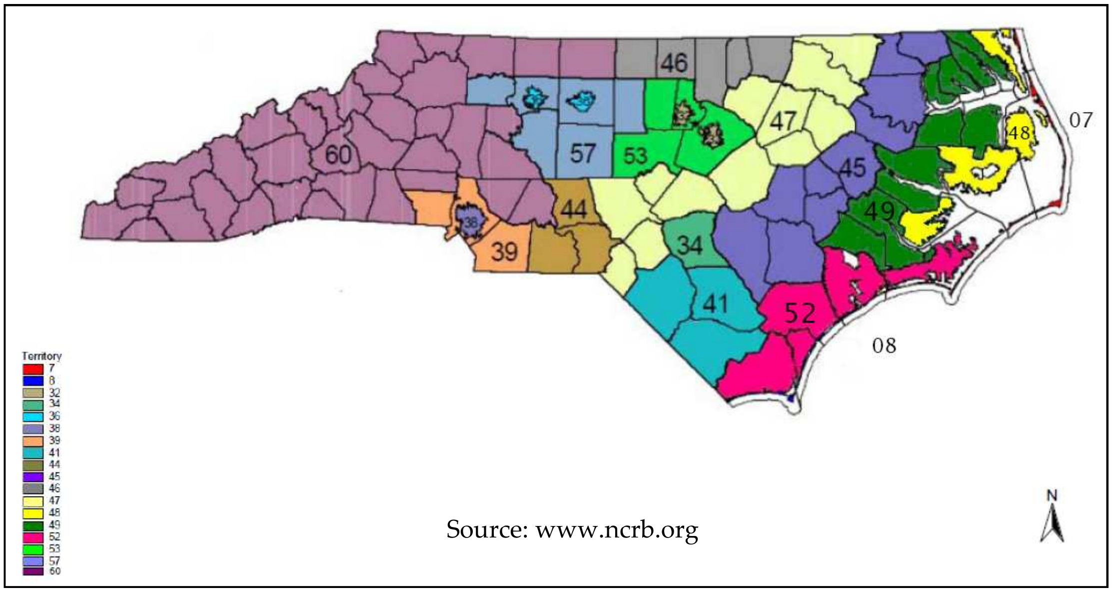
Exhibit 1. Insured Value by Territory in North Carolina

Territory	*Building*	*Contents*	*Total*
7			
Value	4,161,823,634	323,423,542	4,485,247,176
Num. Risks	14,001	12,501	26,502
Orig. Risks	14,001	12,496	26,497
Avg. Value	297,254	25,882	169,273
Avg. Ded $	250	250	250
8			
Value	3,607,463,818	368,213,863	3,975,677,681
Num. Risks	17,034	14,530	31,564
Orig. Risks	16,636	14,165	30,801
Avg. Value	216,847	25,995	129,078
Avg. Ded $	250	250	250
32			
Value	1,767,750,228	47,268,441	1,815,018,669
Num. Risks	11,356	4,174	15,530
Orig. Risks	11,328	4,160	15,488
Avg. Value	156,051	11,362	117,187
Avg. Ded $	250	250	250
34			
Value	1,784,557,534	63,930,696	1,848,488,230
Num. Risks	15,428	5,887	21,315
Orig. Risks	15,424	5,872	21,296
Avg. Value	115,696	10,888	86,798
Avg. Ded $	250	250	250
36			
Value	1,504,151,475	38,128,163	1,542,279,638
Num. Risks	12,294	3,236	15,530
Orig. Risks	12,279	3,220	15,500
Avg. Value	122,493	11,839	99,503
Avg. Ded $	250	250	250
38			
Value	2,031,877,605	50,612,707	2,082,490,312
Num. Risks	12,888	4,346	17,234
Orig. Risks	12,863	4,331	17,194
Avg. Value	157,961	11,685	121,114
Avg. Ded $	250	250	250
39			
Value	2,111,152,093	47,450,163	2,158,602,256
Num. Risks	17,582	4,048	21,630
Orig. Risks	17,560	4,012	21,572
Avg. Value	120,223	11,828	100,065
Avg. Ded $	250	250	250
41			
Value	1,091,980,445	169,855,060	1,261,835,505
Num. Risks	17,379	10,564	27,943
Orig. Risks	17,357	10,553	27,910
Avg. Value	62,914	16,095	45,211
Avg. Ded $	250	250	250
44			
Value	381,523,528	40,524,205	422,047,732
Num. Risks	6,248	2,802	9,050
Orig. Risks	6,231	2,789	9,020
Avg. Value	61,226	14,532	46,790
Avg. Ded $	250	250	250

Territory	*Building*	*Contents*	*Total*
45			
Value	2,068,104,656	149,771,129	2,217,875,785
Num. Risks	27,612	12,604	40,216
Orig. Risks	27,552	12,566	40,118
Avg. Value	75,061	11,919	55,283
Avg. Ded $	250	250	250
46			
Value	616,452,322	38,295,714	654,748,036
Num. Risks	8,770	3,030	11,800
Orig. Risks	8,747	3,018	11,765
Avg. Value	70,477	12,689	55,653
Avg. Ded $	250	250	250
47			
Value	3,083,246,877	175,577,159	3,258,824,036
Num. Risks	37,897	14,893	52,790
Orig. Risks	37,818	14,848	52,667
Avg. Value	81,528	11,825	61,877
Avg. Ded $	250	250	250
48			
Value	458,450,114	44,419,053	502,869,167
Num. Risks	4,426	2,636	7,062
Orig. Risks	4,412	2,621	7,034
Avg. Value	103,899	16,946	71,495
Avg. Ded $	250	250	250
49			
Value	1,426,700,202	123,894,694	1,550,594,896
Num. Risks	16,383	8,570	24,953
Orig. Risks	16,357	8,552	24,909
Avg. Value	87,225	14,487	62,251
Avg. Ded $	250	250	250
52			
Value	3,957,377,634	349,459,096	4,306,836,730
Num. Risks	40,632	23,802	64,434
Orig. Risks	39,662	22,743	62,405
Avg. Value	99,778	15,366	69,015
Avg. Ded $			
53			
Value	2,044,251,264	58,172,662	2,102,423,926
Num. Risks	14,615	5,458	20,073
Orig. Risks	14,578	5,422	20,000
Avg. Value	140,229	10,728	105,120
Avg. Ded $	250	250	250
57			
Value	2,785,938,498	76,182,136	2,862,120,633
Num. Risks	27,737	6,735	34,472
Orig. Risks	27,686	6,681	34,367
Avg. Value	100,625	11,403	83,280
Avg. Ded $	250	250	250
60			
Value	9,531,758,695	386,665,217	9,918,423,912
Num. Risks	95,609	32,371	127,980
Orig. Risks	95,440	32,247	127,687
Avg. Value	99,872	11,991	77,678
Avg. Ded $	250	250	250
Total			
Value	44,414,560,621	2,551,843,699	46,966,404,320
Num. Risks	397,891	172,187	570,078
Orig. Risks	395,933	170,298	566,231
Avg. Value	112,177	14,985	82,946
Avg. Ded $	250	250	250

Exhibit 2 is a map showing the revised NCRB territories.

Exhibit 2. Revised NCRB Territories



Source: www.ncrb.org

Long-Term Average Losses

Exhibit 3 shows the long run average annual hurricane loss potential by territory including aggregate demand surge.

Exhibit 3. Average Annual Loss by Territory in North Carolina

Territory	Buildings*	Contents*	Total*
7	21,375,767	516,210	21,891,976
8	23,620,605	907,382	24,527,987
32	532,893	2,463	535,355
34	926,494	6,291	932,785
36	242,884	1,039	243,923
38	320,972	1,336	322,309
39	358,563	1,679	360,242
41	1,447,980	43,342	1,491,322
44	136,087	2,838	138,925
45	2,031,400	28,802	2,060,202
46	180,857	2,386	183,242
47	1,629,694	18,028	1,647,722
48	1,389,844	36,304	1,426,148
49	2,345,541	52,638	2,398,179
52	15,468,542	497,856	15,966,399
53	653,879	3,701	657,580
57	528,236	3,223	531,459
60	1,066,339	8,913	1,075,251
Total	**74,256,575**	**2,134,432**	**76,391,007**

*US Dollars

Exhibit 4 shows North Carolina's distribution of Dwelling average annual hurricane losses including aggregate demand surge and total insurance in force by territory. The coastal territories account for much higher shares of loss than exposure due to their vulnerability to the hurricane peril.

Exhibit 4. Distribution of Exposure and Loss by Territory in North Carolina

Territory	Insured Value*	Percent of Total	Est. Avg. Annual Loss*	Percent of Total
7	4,485,247,176	9.55%	21,891,976	28.66%
8	3,975,677,681	8.46%	24,527,987	32.11%
32	1,815,018,669	3.86%	535,355	0.70%
34	1,848,488,230	3.94%	932,785	1.22%
36	1,542,279,638	3.28%	243,923	0.32%
38	2,082,490,312	4.43%	322,309	0.42%
39	2,158,602,256	4.60%	360,242	0.47%
41	1,261,835,505	2.69%	1,491,322	1.95%
44	422,047,732	0.90%	138,925	0.18%
45	2,217,875,785	4.72%	2,060,202	2.70%
46	654,748,036	1.39%	183,242	0.24%
47	3,258,824,036	6.94%	1,647,722	2.16%
48	502,869,167	1.07%	1,426,148	1.87%
49	1,550,594,896	3.30%	2,398,179	3.14%
52	4,306,836,730	9.17%	15,966,399	20.90%
53	2,102,423,926	4.48%	657,580	0.86%
57	2,862,120,633	6.09%	531,459	0.70%
60	9,918,423,912	21.12%	1,075,251	1.41%
Total	**46,966,404,320**	**100.00%**	**76,391,007**	**100.00%**

* US Dollars

Estimated Pure Premiums and Loss Costs

Exhibit 5 shows the estimated hurricane loss costs and pure premiums by territory. The coastal territories are most vulnerable to hurricane losses. The estimated loss costs are highest in coastal territories 7 and 8, as well as territories 48 and 52. These territories form part of the eastern tip of North Carolina, an area of relatively high hurricane frequency.

For all exhibits, the estimated loss costs are per $100 of exposure. The estimated hurricane pure premiums are calculated by dividing the estimated average annual losses by the number of risks. The estimated hurricane pure premiums show the amounts, exclusive of expenses and provisions for profit and contingencies, which need to be collected each year to cover only the long run hurricane loss potential.

Exhibit 5. Loss Costs by Territory - North Carolina

Territory	Insured Value*	Risk Count	Average Annual Loss*	Pure Premium	Loss Cost (Per $100)
7	4,485,247,176	26,497	21,891,976	826.20	0.4881
8	3,975,677,681	30,801	24,527,987	796.35	0.6170
32	1,815,018,669	15,488	535,355	34.57	0.0295
34	1,848,488,230	21,296	932,785	43.80	0.0505
36	1,542,279,638	15,500	243,923	15.74	0.0158
38	2,082,490,312	17,194	322,309	18.74	0.0155
39	2,158,602,256	21,572	360,242	16.70	0.0167
41	1,261,835,505	27,910	1,491,322	53.43	0.1182
44	422,047,732	9,020	138,925	15.40	0.0329
45	2,217,875,785	40,118	2,060,202	51.35	0.0929
46	654,748,036	11,765	183,242	15.58	0.0280
47	3,258,824,036	52,667	1,647,722	31.29	0.0506
48	502,869,167	7,034	1,426,148	202.76	0.2836
49	1,550,594,896	24,909	2,398,179	96.28	0.1547
52	4,306,836,730	62,405	15,966,399	255.85	0.3707
53	2,102,423,926	20,000	657,580	32.88	0.0313
57	2,862,120,633	34,367	531,459	15.46	0.0186
60	9,918,423,912	127,687	1,075,251	8.42	0.0108
Total	**46,966,404,320**	**566,231**	**76,391,007**	**134.91**	**0.1627**

* US Dollars

Catastrophe Loss Analysis Service
Atlantic Tropical Cyclone
WSST Catalog

Prepared for: North Carolina Rate Bureau
2010

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The NCRB provided AIR with information that represents the exposures analyzed. AIR reviewed and reformatted the exposure data as necessary and used them as input to the AIR hurricane model, which generated the loss estimates that form the core of this analysis. The AIR model is a system of computer programs that incorporate the fundamental physical characteristics, expressed mathematically, of hurricanes. These characteristics are then overlaid on the geographical distribution of the NCRB's exposures. Building, contents, and time element damage are estimated by applying AIR's proprietary damageability relationships. Finally, insured losses are calculated by applying policy conditions to the total damage estimates.

All aspects of the AIR hurricane model undergo extensive validation tests. The stochastic model variables have been compared to the actual characteristics of historical hurricanes occurring in North Carolina since 1900. The simulated event characteristics parallel patterns seen in the historical record, and resulting loss estimates correspond closely to actual claims data provided by clients.

The model has also undergone extensive internal and external peer review. Internal peer review is a standard part of AIR's operating process and is conducted by AIR's technical staff of over 200 professionals, over 30 of whom hold Ph.D. credentials in their fields of expertise. In addition to that performed by reviewers for the *Journal of Applied Meteorology and Climatology,* AIR's research into hurricane landfall risk under a regime of warm SSTs has been rigorously peer reviewed by several respected scientists in the field, including MIT's Dr. Kerry Emanuel, Dr. James Elsner at Florida State University and Dr. Timothy Hall from NASA/GISS..

Catastrophe models combine the latest scientific and engineering knowledge with computer simulation technology to develop probability distributions of long-run potential losses. They are not forecasting tools.

Forecasting hurricane activity on a short term time horizon, such as a year or a few years ahead, is difficult because of the many climatological factors that influence hurricane activity—and landfall activity in particular—in the North Atlantic. There are several important mechanisms within the earth's environment that are reported to affect hurricane activity. These mechanisms are correlated with a variety of climate signals, which are measurements of the natural feedback systems of the earth in its effort to maintain equilibrium. Climate signals are typically presented as a measurement of anomalies.

For example, the energy source of the hurricane "engine" is heat and moisture from the ocean's surface. The warmer the ocean, the more heat energy is available to tropical storms. Scientists have observed that sea surface temperatures (SSTs) in the North Atlantic undergo fluctuations above and below their mean values in phases lasting multiple decades. (Some scientists refer to this fluctuation as the Atlantic Multi-Decadal Oscillation, or AMO.)

Other climate signals include the:

- El Niño Southern Oscillation (ENSO), which measures sea surface temperature anomalies in the Pacific Ocean off the coast of Peru. These SSTs alternate over an approximate three- to eight-year cycle with an opposite cold phase known as "La Niña." Certain researchers have concluded that the presence of El Niño has a mitigating effect on the frequency of hurricane activity in the Atlantic and the opposite effect in the Pacific.

- Quasi-Biennial Oscillation (QBO), a signal tracking the direction of the equatorial winds in the stratosphere. One theory hypothesizes that when these winds blow from west to east, they have a positive impact on hurricane formation. The QBO has an approximate two-year cycle.

- North Atlantic Oscillation (NAO), a pressure pattern between the high pressure system near the Azores and the low pressure system near Iceland. Scientists have observed that the large-scale general circulation associated with the NAO steers North Atlantic tropical cyclones in a characteristic pattern to the west and eventually to the north. Informally known as the "Bermuda High," when it is in a more southwesterly position, hurricanes are more likely to make landfall than when it is further north and east, off the northern African Coast. The location of the Bermuda High can change several times during a single hurricane season.

Since 1995, SSTs in the North Atlantic have been in a warm phase characterized by elevated SSTs and above-normal hurricane activity. However, there is significant uncertainty associated with quantifying the time horizon and magnitude of this elevated risk and its impact on insured losses.

While recognizing these challenges, AIR has reviewed current scientific research and conducted extensive internal analyses. Based on this research, AIR has developed an alternative catalog of simulated hurricanes ("warm sea surface temperature conditioned catalog") that incorporates the impact of SST anomalies on hurricane.

Statistical analyses were then performed to assess the impact of warm SST anomalies in the North Atlantic on hurricane landfall frequency and intensity. Although this analysis shows that the correlation between SST anomalies and landfall hurricane frequency is relatively weak, a hurricane index is defined as the ratio of mean frequency of hurricanes under warm SST anomalies relative to mean frequency of hurricanes in all years. The index has been developed by hurricane intensity and for four regions along the U.S. coastline. The final index values are guided by statistical assessment of the impact of SSTs and a physical understanding of the varying regional impact warm SST anomalies have along the coastline. The index values developed by AIR were used to develop a revised landfall frequency distribution by coastal segment, which ultimately results in a warm sea surface temperature conditioned stochastic catalog.

The results presented in this report are provided as one view of the uncertainty in a warm sea surface temperature environment. However, the interaction of other shorter-term climate fluctuations, such as those listed above (ENSO, QBO and NAO), can affect the likelihood that hurricanes will make landfall in any given year. This analysis is limited by a number of other additional factors, including but not limited to:

- Uncertainty in forecasting SST conditions.
- Fewer years of data from periods of warm SST conditions compared to more than 100 years of data used in creating the standard catalog.
- Random events that influence climate (for example, volcanic eruptions) and that cannot be predicted or accounted for.

The AIR model simulated 50,000 years of potential hurricane experience. The results of the model are expressed in terms of probability distributions of event losses. These distributions represent a range of possible losses and the relative likelihood of occurrence of various levels of loss. The hurricane model used in this report is Atlantic Tropical Cyclone v.12.01.1229, CLASIC/2 V12.0.4.

Executive Summary

To estimate the hurricane loss potential for NCRB, AIR simulated 50,000 years of potential hurricanes using AIR Worldwide's warm sea surface temperature conditioned hurricane catalog. The simulation included aggregate demand surge, which is demand surge caused by a given event, as well as by other events that occur close to the given event in both time and space.

The long-term average annual aggregate hurricane loss for the NCRB Dwelling policies is $105.5 million including aggregate demand surge. In the 50,000-year sample, 35,362 hurricanes resulted in losses to North Carolina's insured properties net of deductibles. Given that a hurricane has occurred, the estimated average hurricane loss is $149.2 million.

The largest simulated hurricane loss is $5.67 billion including aggregate demand surge. This loss resulted from a category 5 hurricane with landfall in Brunswick County, North Carolina. Note that higher occurrence losses, that is, losses in excess of $5.67 billion, are possible. They have, however, a very low probability of occurrence. Nevertheless, it should be understood that the largest simulated hurricane losses do not represent the worst possible scenarios.

Hurricane events of specified probabilities of exceedance and estimated return times appear below.

Annual Maximum Occurrence Loss

Hurricane Occurrence Loss ($millions)	Estimated Probablility of Exceedance	Estimated Average Return Time (years)
257	10%	10
529	5%	20
1,054	2%	50
1,540	1%	100
2,173	0.4%	250
2,728	0.2%	500
3,218	0.1%	1000

Actual hurricane losses are influenced by a number of characteristics, the most important of which is intensity as measured by wind speed, commonly expressed in terms of Saffir-Simpson (SS) category. Given the same landfall point, storms with higher wind speeds typically result in larger losses than do storms with lower wind speeds. Other characteristics that influence loss amounts include radius of maximum winds, forward speed, and storm track.

Actual losses also depend on the geographical distribution of exposures in relation to the area affected by the storm. That is, a severe hurricane could result in a smaller overall loss than a less severe hurricane if the less severe hurricane strikes an area of higher property value.

Exposure Information and Assumptions

The NCRB provided exposure information used to generate the loss estimates. The exposure file contained information on number of risks, coverage amounts of insurance and construction class by Statistical Plan category (Voluntary, FAIR Plan or Beach Plan), ZIP Code, line of business, coverage form and by pre-existing NCRB territory. They also provided a mapping file associating these territories and ZIP Codes to revised territory definitions. This enabled AIR to produce results based upon these revised territories.

When a zip code is split between two territories, and one of the territories intersecting the zip code is categorized as beach territory by ISO, the ZIP is considered a 'Beach Split ZIP'. For 'Beach Split ZIP Codes' the exposure is distributed to uniform grid points across the area of the zip code falling in each of the territories.

The information on house-years and insurance-years by category, ZIP Code, line of business, construction class, and territory was provided by the Insurance Services Office (ISO) and represents the Full Statistical Plan experience of companies reporting to either ISO or the National Association of Independent Insurers.

Consistent in the level of coverage provided by NCRB forms, the insurance years provided by NCRB for Form 2 were increased by 20% for Buildings to reflect non-primary coverage for other structures and loss of use.

An original data set was provided by ISO and analyzed by AIR in order to yield loss estimates. Exhibit 1 shows total insured values, number of risks, and average values by territory.

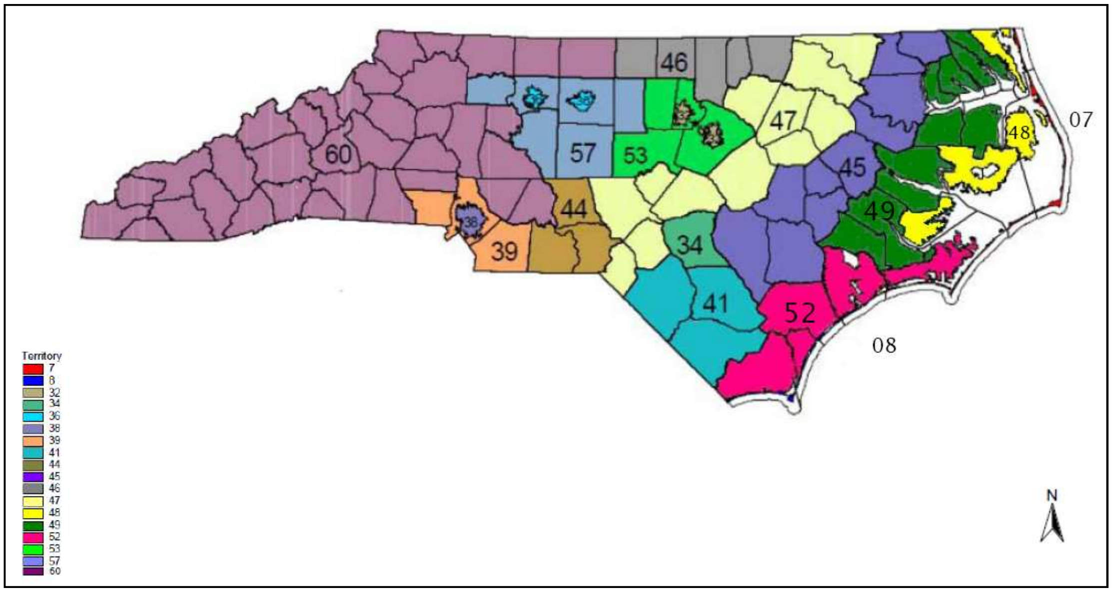
Exhibit 1. Insured Value by Territory in North Carolina

Territory	*Building*	*Contents*	*Total*
7			
Value	4,161,823,634	323,423,542	4,485,247,176
Num. Risks	14,001	12,501	26,502
Orig. Risks	14,001	12,496	26,497
Avg. Value	297,254	25,882	169,273
Avg. Ded $	250	250	250
8			
Value	3,607,463,818	368,213,863	3,975,677,681
Num. Risks	17,034	14,530	31,564
Orig. Risks	16,636	14,165	30,801
Avg. Value	216,847	25,995	129,078
Avg. Ded $	250	250	250
32			
Value	1,767,750,228	47,268,441	1,815,018,669
Num. Risks	11,356	4,174	15,530
Orig. Risks	11,328	4,160	15,488
Avg. Value	156,051	11,362	117,187
Avg. Ded $	250	250	250
34			
Value	1,784,557,534	63,930,696	1,848,488,230
Num. Risks	15,428	5,887	21,315
Orig. Risks	15,424	5,872	21,296
Avg. Value	115,696	10,888	86,798
Avg. Ded $	250	250	250
36			
Value	1,504,151,475	38,128,163	1,542,279,638
Num. Risks	12,294	3,236	15,530
Orig. Risks	12,279	3,220	15,500
Avg. Value	122,493	11,839	99,503
Avg. Ded $	250	250	250
38			
Value	2,031,877,605	50,612,707	2,082,490,312
Num. Risks	12,888	4,346	17,234
Orig. Risks	12,863	4,331	17,194
Avg. Value	157,961	11,685	121,114
Avg. Ded $	250	250	250
39			
Value	2,111,152,093	47,450,163	2,158,602,256
Num. Risks	17,582	4,048	21,630
Orig. Risks	17,560	4,012	21,572
Avg. Value	120,223	11,828	100,065
Avg. Ded $	250	250	250
41			
Value	1,091,980,445	169,855,060	1,261,835,505
Num. Risks	17,379	10,564	27,943
Orig. Risks	17,357	10,553	27,910
Avg. Value	62,914	16,095	45,211
Avg. Ded $	250	250	250
44			
Value	381,523,528	40,524,205	422,047,732
Num. Risks	6,248	2,802	9,050
Orig. Risks	6,231	2,789	9,020
Avg. Value	61,226	14,532	46,790
Avg. Ded $	250	250	250

Territory	Building	Contents	Total
45			
Value	2,068,104,656	149,771,129	2,217,875,785
Num. Risks	27,612	12,604	40,216
Orig. Risks	27,552	12,566	40,118
Avg. Value	75,061	11,919	55,283
Avg. Ded $	250	250	250
46			
Value	616,452,322	38,295,714	654,748,036
Num. Risks	8,770	3,030	11,800
Orig. Risks	8,747	3,018	11,765
Avg. Value	70,477	12,689	55,653
Avg. Ded $	250	250	250
47			
Value	3,083,246,877	175,577,159	3,258,824,036
Num. Risks	37,897	14,893	52,790
Orig. Risks	37,818	14,848	52,667
Avg. Value	81,528	11,825	61,877
Avg. Ded $	250	250	250
48			
Value	458,450,114	44,419,053	502,869,167
Num. Risks	4,426	2,636	7,062
Orig. Risks	4,412	2,621	7,034
Avg. Value	103,899	16,946	71,495
Avg. Ded $	250	250	250
49			
Value	1,426,700,202	123,894,694	1,550,594,896
Num. Risks	16,383	8,570	24,953
Orig. Risks	16,357	8,552	24,909
Avg. Value	87,225	14,487	62,251
Avg. Ded $	250	250	250
52			
Value	3,957,377,634	349,459,096	4,306,836,730
Num. Risks	40,632	23,802	64,434
Orig. Risks	39,662	22,743	62,405
Avg. Value	99,778	15,366	69,015
Avg. Ded $			
53			
Value	2,044,251,264	58,172,662	2,102,423,926
Num. Risks	14,615	5,458	20,073
Orig. Risks	14,578	5,422	20,000
Avg. Value	140,229	10,728	105,120
Avg. Ded $	250	250	250
57			
Value	2,785,938,498	76,182,136	2,862,120,633
Num. Risks	27,737	6,735	34,472
Orig. Risks	27,686	6,681	34,367
Avg. Value	100,625	11,403	83,280
Avg. Ded $	250	250	250
60			
Value	9,531,758,695	386,665,217	9,918,423,912
Num. Risks	95,609	32,371	127,980
Orig. Risks	95,440	32,247	127,687
Avg. Value	99,872	11,991	77,678
Avg. Ded $	250	250	250
Total			
Value	44,414,560,621	2,551,843,699	46,966,404,320
Num. Risks	397,891	172,187	570,078
Orig. Risks	395,933	170,298	566,231
Avg. Value	112,177	14,985	82,946
Avg. Ded $	250	250	250

Exhibit 2 is a map showing the revised NCRB territories.

Exhibit 2. Revised NCRB Territories



Long-Term Average Losses

Exhibit 3 shows the long run average annual hurricane loss potential by territory including aggregate demand surge.

Exhibit 4 shows North Carolina's distribution of Dwelling average annual hurricane losses including aggregate demand surge and total insurance in force by territory. The coastal territories account for much higher shares of loss than exposure due to their vulnerability to the hurricane peril.

Exhibit 3. Average Annual Loss by Territory in North Carolina

Territory	Buildings*	Contents*	Total*
7	28,520,372	710,044	29,230,416
8	32,746,914	1,273,890	34,020,804
32	786,099	3,665	789,763
34	1,335,254	9,058	1,344,312
36	352,111	1,528	353,640
38	453,257	1,911	455,167
39	507,754	2,395	510,149
41	2,075,990	61,831	2,137,821
44	194,893	4,084	198,977
45	2,957,156	41,679	2,998,834
46	266,518	3,529	270,046
47	2,376,557	26,301	2,402,858
48	1,891,439	50,180	1,941,618
49	3,313,246	74,278	3,387,524
52	21,524,590	697,392	22,221,982
53	958,968	5,444	964,411
57	761,525	4,682	766,207
60	1,527,907	12,881	1,540,788
Total	**102,550,549**	**2,984,770**	**105,535,319**

*US Dollars

Exhibit 4. Distribution of Exposure and Loss by Territory in North Carolina

Territory	Insured Value*	Percent of Total	Est. Avg. Annual Loss*	Percent of Total
7	4,485,247,176	9.55%	29,230,416	27.70%
8	3,975,677,681	8.46%	34,020,804	32.24%
32	1,815,018,669	3.86%	789,763	0.75%
34	1,848,488,230	3.94%	1,344,312	1.27%
36	1,542,279,638	3.28%	353,640	0.34%
38	2,082,490,312	4.43%	455,167	0.43%
39	2,158,602,256	4.60%	510,149	0.48%
41	1,261,835,505	2.69%	2,137,821	2.03%
44	422,047,732	0.90%	198,977	0.19%
45	2,217,875,785	4.72%	2,998,834	2.84%
46	654,748,036	1.39%	270,046	0.26%
47	3,258,824,036	6.94%	2,402,858	2.28%
48	502,869,167	1.07%	1,941,618	1.84%
49	1,550,594,896	3.30%	3,387,524	3.21%
52	4,306,836,730	9.17%	22,221,982	21.06%
53	2,102,423,926	4.48%	964,411	0.91%
57	2,862,120,633	6.09%	766,207	0.73%
60	9,918,423,912	21.12%	1,540,788	1.46%
Total	**46,966,404,320**	**100.00%**	**105,535,319**	**100.00%**

* US Dollars

Estimated Pure Premiums and Loss Costs

Exhibit 5 shows the estimated hurricane loss costs and pure premiums by territory. Clearly, the coastal territories are most vulnerable to hurricane losses. The estimated loss costs are highest in coastal territories 7 and 8, as well as territories 48 and 52. These territories form part of the eastern tip of North Carolina, an area of relatively high hurricane frequency.

For all exhibits, the estimated loss costs are per $100 of exposure. The estimated hurricane pure premiums are calculated by dividing the estimated average annual losses by the number of risks. The estimated hurricane pure premiums show the amounts, exclusive of expenses and provisions for profit and contingencies, which need to be collected each year to cover only the long run hurricane loss potential.

Exhibit 5. Loss Costs by Territory - North Carolina

Territory	Insured Value*	Risk Count	Average Annual Loss*	Pure Premium	Loss Cost (Per $100)
7	4,485,247,176	26,497	29,230,416	1,103.15	0.6517
8	3,975,677,681	30,801	34,020,804	1,104.55	0.8557
32	1,815,018,669	15,488	789,763	50.99	0.0435
34	1,848,488,230	21,296	1,344,312	63.12	0.0727
36	1,542,279,638	15,500	353,640	22.82	0.0229
38	2,082,490,312	17,194	455,167	26.47	0.0219
39	2,158,602,256	21,572	510,149	23.65	0.0236
41	1,261,835,505	27,910	2,137,821	76.60	0.1694
44	422,047,732	9,020	198,977	22.06	0.0471
45	2,217,875,785	40,118	2,998,834	74.75	0.1352
46	654,748,036	11,765	270,046	22.95	0.0412
47	3,258,824,036	52,667	2,402,858	45.62	0.0737
48	502,869,167	7,034	1,941,618	276.05	0.3861
49	1,550,594,896	24,909	3,387,524	136.00	0.2185
52	4,306,836,730	62,405	22,221,982	356.10	0.5160
53	2,102,423,926	20,000	964,411	48.22	0.0459
57	2,862,120,633	34,367	766,207	22.29	0.0268
60	9,918,423,912	127,687	1,540,788	12.07	0.0155
Total	**46,966,404,320**	**566,231**	**105,535,319**	**186.38**	**0.2247**

* US Dollars

PREFILED TESTIMONY OF JAMES H. VANDER WEIDE

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE RATE FILING BY THE NORTH CAROLINA RATE BUREAU JANUARY 2011

Q. WHAT IS YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS?

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to corporate clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PRIOR ACADEMIC EXPERIENCE.

A. I graduated from Cornell University with a Bachelor's Degree in Economics and then attended Northwestern University where I earned a Ph.D. in Finance. I joined the faculty of the School of Business at Duke University where I was subsequently named Assistant Professor, Associate Professor, and then Professor.

Since joining the faculty I have taught courses in corporate finance, investment management, and management of financial institutions. I have also taught a graduate seminar on the theory of public utility pricing and lectured in executive development seminars on the cost of capital, financial analysis, capital budgeting, mergers and acquisitions, cash management, short-run financial planning, and competitive strategy.

I have served as Program Director and taught in numerous executive education programs at Duke, including the Duke Advanced Management Program, the Duke Management Challenge, the Duke Executive Program in Telecommunications, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union. I also teach in tailored programs developed for corporations such as ABB, Accenture, Allstate, AT&T, Progress Energy, GlaxoSmithKline, Lafarge, MidAmerican Energy, Norfolk Southern, The Rank Group, Siemens, TRW, and Wolseley PLC.

In addition to my teaching and executive education activities, I have written research papers on such topics as portfolio management, the cost of capital, capital budgeting, the effect of regulation on the performance of public utilities, and cash management. My articles have been published in *American Economic Review, Financial*

Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Accounting Research, Journal of Cash Management, Management Science, The Journal of Portfolio Management, Atlantic Economic Journal, Journal of Economics and Business, and *Computers and Operations Research.* I have written a book titled *Managing Corporate Liquidity: an Introduction to Working Capital Management*, a chapter for *The Handbook of Modern Finance*, "Financial Management in the Short Run," and a chapter for the forthcoming book, *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques,* "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory."

Q. HAVE YOU PREVIOUSLY PRESENTED EVIDENCE ON THE COST OF CAPITAL AND OTHER REGULATORY ISSUES?

A. Yes. As an expert on financial and economic theory, I have testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in approximately 400 cases before the U.S. Congress, the Federal Communications Commission, the National Telecommunications and Information Administration, the

Federal Energy Regulatory Commission, the Canadian Radio-Television and Telecommunications Commission, The National Energy Board (Canada),the public service commissions of 43 states and the District of Columbia, the insurance commissions of five states, the Iowa State Board of Tax Review, and the National Association of Securities Dealers. In addition, I have testified as an expert witness in proceedings before the U.S. District Court for the Northern District of California; U.S. District Court for the District of Nebraska; United States District Court for the District of New Hampshire; U.S. District Court for the Eastern District of North Carolina; Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U.S. District Court for the Eastern District of Michigan.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by the North Carolina Rate Bureau to make an independent appraisal of the aggregate cost of equity capital for the companies writing dwelling fire and extended coverage insurance in North Carolina and to recommend a rate of return on equity that is fair, that allows those companies in the aggregate to attract and retain capital on reasonable terms, that is commensurate with returns on investments of comparable risk, and that maintains the financial integrity of those companies in the aggregate.

Q. WHAT DO YOU MEAN BY THE PHRASE “COST OF EQUITY CAPITAL?”

A. A firm's cost of equity capital is the rate of return expectation that is required in the marketplace on equity investments of comparable risk. If an investor does not expect to earn a return on an equity investment in a firm that is at least as large as the return the investor could expect to earn on other investments of comparable risk, then the investor will not invest in that firm’s shares. Thus, a firm’s cost of equity capital is also the rate of return expectation that is required in the marketplace in order to induce equity investors to purchase shares in that firm.

Q. IS THE COST OF EQUITY CAPITAL THE SAME AS THE RETURN ON EQUITY?

A. No. The cost of equity capital is a market-based concept that reflects investors' future expectations, while the return on equity is an accounting concept that measures results of past performance. The return on equity is equal to income available for common equity divided by the book value of common equity.

Q. HAVE YOU FORMED AN OPINION REGARDING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. Yes.

Q. WHAT IS YOUR OPINION IN THAT REGARD?

A. The cost of equity capital for such a company is in the range 10.3 percent to 13.2 percent.

Q. WHAT ECONOMIC PRINCIPLES DO YOU CONSIDER IN ARRIVING AT THAT OPINION?

A. There are two primary economic principles relevant to my appraisal of the cost of equity capital. The first, relating to the demand for capital, states that a firm should continue to invest in its business only so long as the return on its investment is greater than or equal to its cost of capital. In the context of a regulated firm, this principle suggests that the regulatory agency should establish revenue levels which will offer the firm an opportunity to earn a return on its investment that is at least equal to its cost of capital.

The second principle, relating to the supply of capital, states that rational investors are maximizing their total return on capital only if the returns they expect to receive on investments of comparable risk are equal. If these returns are not equal, rational investors will reduce or completely eliminate investments in those activities yielding lower expected returns for a given level of risk and will increase investments in those activities yielding higher expected returns. The second principle implies that regulated firms will be unable to obtain the capital required to expand service on reasonable terms unless they are able to provide investors returns equal to those expected on investments of comparable risk.

Q. DO THESE ECONOMIC PRINCIPLES APPLY TO THE SETTING OF INSURANCE RATES?

A. Yes. These are general economic principles that apply to investing in any business activity, including insurance.

Q. HOW DID YOU GO ABOUT DETERMINING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. I used two generally accepted methods to estimate the cost of equity: (i) the Discounted Cash Flow (DCF) Model, and (ii) the Risk Premium Approach.

Q. PLEASE DESCRIBE THE DCF MODEL.

A. The DCF Model suggests that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. This is because, if they had the dollar today, they could invest it in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond suggests that investors should value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should be equal to:

Equation 1

$$P_B = \frac{C}{(1 + i)} + \frac{C}{(1 + i)^2} + \ldots + \frac{C + F}{(1 + i)^n}$$

where:

P_B	=	bond price;
C	=	cash value of the coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	face value of the bond;
I	=	the rate of interest the investor could earn by investing his money in an alternative bond of equal risk; and
n	=	the number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

Equation 2

$$P_S = \frac{D_1}{(1 + k)} + \frac{D_2}{(1 + k)^2} + \ldots + \frac{D_n + P_n}{(1 + k)^n}$$

where:

P_S	=	current price of the firm's stock;
$D_1, D_2 \ldots D_n$	=	expected annual dividend per share on the firm's stock;
P_n	=	price per share of stock at the time the investor expects to sell the stock; and
k	=	return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the Annual Discounted Cash Flow (DCF) Model of stock valuation.

Q. HOW DO YOU USE THE DCF MODEL TO DETERMINE THE COST OF EQUITY CAPITAL?

A. The "k" in the equation is the cost of equity capital. We make certain simplifying assumptions regarding the other factors in the equation and then mathematically solve for "k."

Q. WHAT ARE THE ASSUMPTIONS YOU MAKE?

A. Most analysts make three simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate ("g") into the indefinite future. Second, they assume that the stock price at time "n" is simply the present value of all dividends expected in periods subsequent to "n." Third, they assume that the investors' required rate of return, "k," exceeds the expected dividend growth rate, "g."

Q. DOES THE ANNUAL DCF MODEL OF STOCK VALUATION PRODUCE APPROPRIATE ESTIMATES OF A FIRM'S COST OF EQUITY CAPITAL?

A. No. The Annual DCF Model of stock valuation produces appropriate estimates of a firm's cost of equity capital only if the firm pays dividends just once a year. Since most firms pay dividends quarterly, the Annual DCF Model produces downwardly biased estimates of the cost of equity. Investors can expect to earn a higher annual effective return on an investment in a firm that pays quarterly dividends than in one which pays the same amount of dollar dividends once at the end of each year. A complete analysis of the implications of the quarterly payment of dividends on the DCF Model is provided in Exhibit RB-11. For the reasons cited there, I employed the Quarterly DCF Model throughout my calculations.

Q. PLEASE DESCRIBE THE QUARTERLY DCF MODEL YOU USED.

A. The Quarterly DCF Model I used is described by Equation 10 on page 11 in Exhibit RB-11. This equation shows that the cost of equity is: the sum of the dividend yield and the growth rate, where the dividend in the dividend yield is the equivalent dividend at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. HOW DO YOU APPLY THE DCF APPROACH TO OBTAIN THE COST OF EQUITY CAPITAL FOR THE COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. I apply the DCF approach to two groups of companies: Value Line’s group of property/casualty insurance companies and the S&P 500.

Q. WHY DO YOU APPLY THE DCF APPROACH TO THE S&P 500 AS WELL AS TO VALUE LINE’S PROPERTY/CASUALTY INSURANCE COMPANIES?

A. As I noted previously, the cost of equity is defined as the rate of return investors expect to earn on investments in other companies of comparable risk. I apply the DCF approach to the S&P 500 because they are a large group of companies that, on average, are typically viewed as being comparable in risk to the property/casualty insurance industry. The use of a larger set of comparable risk companies should provide an accurate estimate of the cost of equity for the companies writing dwelling fire and extended coverage insurance in North Carolina.

Q. DO YOU INCLUDE ALL THE VALUE LINE PROPERTY/CASUALTY INSURANCE COMPANIES?

A. No. Among the Value Line property/casualty insurance companies, I delete any firm which has recently lowered its dividend and which has fewer than three five-year earnings forecasts available from I/B/E/S (formerly known as the Institutional Brokers Estimate System, now part of Thomson

Reuters). The Value Line property/casualty companies I use are shown in Exhibit RB-9.[1]

Q. WHAT CRITERIA DO YOU USE TO SELECT COMPANIES IN THE S&P 500?

A. I include those firms which pay dividends and which have at least three five-year earnings forecasts available from I/B/E/S. I exclude the insurance companies in the S&P 500, as identified by I/B/E/S Thomson Reuters, because I have already calculated DCF results for the Value Line property/casualty insurance companies. The S&P 500 companies I use are shown in Exhibit RB-10.

Q. WHY DO YOU ELIMINATE ANY COMPANY WHICH HAD RECENTLY LOWERED ITS DIVIDEND OR WHICH FAILS TO PAY DIVIDENDS?

A. I eliminate those companies because it is difficult to make a reliable estimate of the future dividend growth rate for companies that have recently lowered their dividends or do not pay dividends. If a company has recently lowered its dividend, investors do not know whether the company will again lower its dividend in the future, or whether the company will attempt to increase its dividend back toward

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1 At this time, my selection criteria produce a group of only three Value Line property/casualty insurance companies. Therefore, I also report DCF results for five additional companies that have two I/B/E/S analysts' five-year earnings growth forecasts, including Allstate, Hanover, HCC Insurance Holdings, Mercury General, and Selective.

its previous level. If a company does not pay a dividend, one cannot mathematically apply the DCF approach.

Q. HOW DO YOU ESTIMATE THE GROWTH COMPONENT OF THE QUARTERLY DCF MODEL?

A. I use the average of analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S. As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. The forecasts are used by investors who are contemplating purchasing or selling shares in individual companies.

Q. WHAT IS I/B/E/S?

A. I/B/E/S is a collection of analysts' forecasts for a broad group of companies expressed in terms of a mean forecast and a standard deviation of forecast for each firm. The mean forecast is used by investors as an estimate of future firm performance.

Q. WHY DO YOU USE THE I/B/E/S GROWTH ESTIMATES?

A. The I/B/E/S growth rates (1) are widely circulated in the financial community, (2) include the projections of a large number of reputable financial analysts who develop estimates of future growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors. For these reasons, I believe these estimates represent unbiased estimates of investors' expectations of each firm's long-term growth prospects and, accordingly, are incorporated by investors into their return requirements. Consequently, in my opinion, they provide the best available estimate of investors' long-term growth expectations.

Q. WHY DO YOU RELY EXCLUSIVELY ON ANALYSTS' PROJECTIONS OF FUTURE EPS GROWTH IN ESTIMATING THE INVESTORS' EXPECTED GROWTH RATE RATHER THAN LOOKING AT PAST HISTORICAL GROWTH RATES?

A. There is considerable empirical evidence that analysts' forecasts are more highly correlated with stock prices than are firms' historical growth rates, and, thus, that investors actually use these forecasts.

Q. HAVE YOU PERFORMED ANY STUDIES CONCERNING THE USE OF ANALYSTS' FORECASTS AS THE BEST ESTIMATE OF INVESTORS' EXPECTED GROWTH RATE, G?

A. Yes, I prepared a study in conjunction with Willard T. Carleton, Professor of Finance Emeritus at the University of Arizona, on why analysts' forecasts provide the best estimate of investors' expectations of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations: Analysts vs. History," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR STUDY.

A. First, we performed a correlation analysis to identify the historically-oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the consensus analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area. These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. WHAT PRICE DO YOU USE IN YOUR DCF MODEL?

A. I use a simple average of the monthly high and low stock prices for each firm for the three-month period, April, May, and June 2010. These high and low stock prices were obtained from Thomson Reuters.

Q. WHY DO YOU USE THE THREE-MONTH AVERAGE STOCK PRICE, P_0, IN APPLYING THE DCF METHOD?

A. I use a three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. PLEASE EXPLAIN YOUR INCLUSION OF FLOTATION COSTS.

A. All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are paid from the proceeds of the stock sale and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between four percent and five percent of the proceeds from the issue. In addition to these costs, for large equity issues there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two percent to three percent.

These cost ranges have been developed and confirmed in a number of generally accepted studies. I believe a combined five percent allowance for flotation costs and market pressure is a conservative estimate that can be used in applying the DCF Model in this proceeding.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR APPLICATION OF THE DCF METHOD TO THE PROPERTY/CASUALTY INSURANCE COMPANIES AND THE S&P 500.

A. As shown in Exhibits RB-9 and RB-10, the average DCF cost of equity capital for my group of Value Line property/casualty companies is 13.2 percent; and for the S&P 500 companies, 12.9 percent.

Q. WHAT CONCLUSION DO YOU REACH FROM YOUR DCF ANALYSIS ABOUT THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. On the basis of my DCF analysis, I would conclude that for companies writing dwelling fire and extended coverage insurance in North Carolina the cost of equity is in the range 12.9 percent to 13.2 percent.

Q. YOU NOTE THAT THE SECOND METHOD YOU USE TO ESTIMATE THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA IS A RISK PREMIUM APPROACH. PLEASE DESCRIBE THAT APPROACH.

A. I perform a study of the comparable returns received by bond and stock investors over the last 84 years. I estimate the returns on stock and bond portfolios, using stock price and dividend yield data on the S&P 500 stock portfolio and bond yield data on Moody's A-rated utility bonds.

My study consists of analyzing the historically achieved returns on broadly based stock and bond portfolios going back to 1926. For stocks, I use the S&P 500 stock portfolio; and for bonds, I use Moody's A-rated utility bonds. The resulting annual returns on the stock and bond portfolios purchased in each year from 1926 through 2009 are shown on Exhibit RB-12. The difference between the stock return and the bond return over that period of time on an arithmetic average basis is 4.68 percentage points.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR RISK PREMIUM ANALYSES?

A. My own studies, combined with my analysis of other studies, provide strong evidence for the belief that investors today require an equity return of approximately 4.68 percentage points above the expected yield on A-rated long-term debt issues.

Interest rates on Moody's seasoned A-rated utility bonds during the three months April through June 2010 range from 5.5 percent to 5.8 percent. On the basis of this information and my knowledge of bond market conditions, I conclude that the long-term yield on A-rated utility bonds is approximately 5.6 percent. Adding a 4.68 percentage point risk premium to the 5.6 percent expected yield on A-rated utility bonds, I obtain an expected return on equity of 10.3 percent.

Q. BASED ON YOUR ANALYSES, WHAT IS YOUR OPINION AS TO THE COST OF CAPITAL FOR THE AVERAGE INSURANCE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. Based on my review and studies, I believe that a conservative estimate of the cost of common equity capital for the average insurance company writing dwelling fire and extended coverage insurance in North Carolina is in the range 10.3 percent to 13.2 percent.

Q. IS THE COST OF EQUITY A FAIR RETURN ON EQUITY?

A. No. The cost of equity is a market-based concept that reflects the return investors expect on the market value of their investment. The fair return on equity is an accounting concept that expresses the accounting rate of return the company earns on the book value of its investment. The cost of equity and the fair return on equity will be equal only when the market value of equity is equal to the book value of equity. Generally, the market value of equity is greater than the book value of equity for both the average firm and the average property/casualty insurer. When the market value of equity is greater than the book value of equity, the fair rate of return on equity must exceed the cost of equity capital for equity investors to have a reasonable expectation of earning their required return on investment.

Q. DO YOU CONVERT YOUR COST OF EQUITY CAPITAL TO A FAIR RETURN ON EQUITY?

A. No. In this proceeding I do not convert my cost of equity capital to the fair return on equity. The data that I previously used to convert my cost of equity to a fair return on equity has not been updated in several years. However, in the absence of data necessary to perform an explicit study, to be conservative, I recommend that my cost of equity estimate also be used as an estimate of the fair return on equity.

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR PROPERTY/CASUALTY INSURANCE COMPANIES[1]

LINE NO.	COMPANY	D_0	P_0	GROWTH	COST OF EQUITY
1	ACE Limited	0.33	51.643	13.04%	16.1%
2	Allstate Corp.	0.20	31.582	9.00%	12.0%
3	Chubb Corp.	0.37	51.510	9.18%	12.5%
4	HCC Insurance Hldgs.	0.14	25.972	7.50%	9.9%
5	Mercury General	0.59	43.742	7.65%	14.0%
6	Selective Ins. Group	0.13	15.910	5.20%	8.9%
7	Hanover Insurance	0.25	44.092	11.00%	13.8%
8	Travelers Cos.	0.36	50.568	14.35%	17.8%
9	Average				13.2%

Notes:

d_0	=	Latest quarterly dividend.
d_1, d_2, d_3, d_4,	=	Expected next four quarterly dividends, calculated by multiplying the last four quarterly dividends per Value Line, by the factor (1 + g).
P_0	=	Average of the monthly high and low stock prices during the three months ending June 2010 per Thomson Reuters.
FC	=	Flotation costs.
g	=	I/B/E/S forecast of future earnings growth June 2010.
k	=	Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs and market pressure (selling costs) as shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1 - FC)} + g$$

1 To be conservative, I include Allstate in the DCF analysis, even though Allstate lowered its dividend in the first quarter 2009. Removing Allstate from the analysis increases the average DCF result to 13.3 percent.

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR
S&P 500 COMPANIES

LINE	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
1	AMERISOURCEBERGEN	30.78	0.32	13.37%	14.6%
2	ABBOTT LABORATORIES	49.07	1.76	9.72%	13.9%
3	ANALOG DEVICES	29.17	0.88	11.67%	15.3%
4	AUTOMATIC DATA PROC.	40.32	1.36	11.26%	15.3%
5	ALLERGAN	61.05	0.20	13.80%	14.2%
6	APPLIED MATS.	13.24	0.28	13.33%	15.9%
7	AMGEN	55.94	0.00	8.82%	8.8%
8	AMERIPRISE FINL.	42.59	0.72	13.47%	15.5%
9	ANADARKO PETROLEUM	56.06	0.36	10.50%	11.2%
10	AIR PRDS.& CHEMS.	72.14	1.96	11.35%	14.6%
11	AMPHENOL 'A'	43.13	0.06	16.00%	16.2%
12	AIRGAS	62.71	0.88	11.53%	13.2%
13	AVON PRODUCTS	29.76	0.88	10.43%	13.9%
14	AMERICAN EXPRESS	42.59	0.72	9.60%	11.6%
15	BOEING	68.40	1.68	8.75%	11.6%
16	BAXTER INTL.	46.45	1.16	9.67%	12.6%
17	BEST BUY	42.22	0.60	11.62%	13.3%
18	C R BARD	83.16	0.72	11.86%	12.9%
19	BECTON DICKINSON	73.56	1.48	11.50%	13.9%
20	FRANKLIN RESOURCES	104.89	0.88	11.90%	12.9%
21	BIG LOTS	36.30	0.00	12.84%	12.8%
22	BANK OF NEW YORK MELLON	28.91	0.36	9.33%	10.8%
23	BROADCOM 'A'	33.65	0.32	16.15%	17.3%
24	CA	21.27	0.16	9.17%	10.0%
25	CONAGRA FOODS	24.24	0.80	10.63%	14.5%
26	CARDINAL HEALTH	34.74	0.78	9.75%	12.4%
27	CBS 'B'	14.84	0.20	10.51%	12.1%
28	CARNIVAL	37.69	0.40	12.53%	13.8%
29	CHESAPEAKE ENERGY	23.07	0.30	7.50%	9.0%
30	CH ROBINSON WWD.	58.01	1.00	13.29%	15.4%
31	CIGNA	33.65	0.04	9.62%	9.8%
32	COLGATE-PALM.	81.39	2.12	9.12%	12.1%
33	COMERICA	39.86	0.20	8.38%	9.0%
34	COMCAST 'A'	18.50	0.38	10.48%	12.9%
35	CME GROUP	316.07	4.60	13.25%	15.0%
36	CUMMINS	68.99	0.70	14.75%	16.0%
37	COACH	40.56	0.60	14.00%	15.8%
38	COSTCO WHOLESALE	58.38	0.82	12.95%	14.6%
39	COMPUTER SCIS.	50.75	0.60	9.67%	11.0%
40	CSX	54.03	0.96	8.62%	10.7%
41	CINTAS	26.46	0.48	9.90%	12.0%
42	CENTURYLINK	31.27	2.90	0.45%	10.6%
43	CVS CAREMARK	34.73	0.35	12.14%	13.3%
44	CHEVRON	76.46	2.88	11.38%	15.9%
45	DOMINION RES.	40.76	1.83	4.70%	9.7%
46	E I DU PONT DE NEMOURS	37.69	1.64	6.17%	11.1%
47	DEERE	58.73	1.20	9.67%	12.0%
48	QUEST DIAGNOSTICS	53.04	0.40	11.89%	12.8%

LINE	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
49	DANAHER	40.33	0.08	15.30%	15.5%
50	WALT DISNEY	34.78	0.35	8.99%	10.1%
51	DARDEN RESTAURANTS	43.73	1.28	12.35%	15.9%
52	DUKE ENERGY	16.30	0.98	4.43%	11.2%
53	ECOLAB	46.72	0.62	13.15%	14.7%
54	CONSOLIDATED EDISON	44.03	2.38	4.27%	10.3%
55	EQUIFAX	31.82	0.16	9.77%	10.4%
56	EMERSON ELECTRIC	48.68	1.34	12.43%	15.7%
57	EATON	74.03	2.00	7.96%	11.1%
58	EXPEDITOR INTL.OF WASH.	38.34	0.40	14.70%	16.0%
59	EXPEDIA	22.48	0.28	11.67%	13.1%
60	FAMILY DOLLAR STORES	39.20	0.62	13.58%	15.5%
61	FEDEX	85.51	0.48	13.72%	14.4%
62	FEDERATED INVRS.'B'	23.57	0.96	9.33%	14.1%
63	FIDELITY NAT.INFO.SVS.	26.80	0.20	11.56%	12.4%
64	GENERAL DYNAMICS	70.61	1.68	7.25%	10.0%
65	GENERAL ELECTRIC	17.17	0.40	10.75%	13.5%
66	GENERAL MILLS	36.00	1.12	8.65%	12.3%
67	CORNING	18.42	0.20	11.83%	13.1%
68	GENWORTH FINANCIAL	16.01	0.00	13.37%	13.4%
69	GENUINE PARTS	41.68	1.64	9.27%	13.9%
70	GAP	23.06	0.40	10.10%	12.1%
71	GOODRICH	71.02	1.08	9.22%	11.0%
72	WW GRAINGER	106.19	2.16	12.50%	14.9%
73	HALLIBURTON	28.30	0.36	9.72%	11.2%
74	HONEYWELL INTL.	44.49	1.21	10.26%	13.5%
75	HEWLETT-PACKARD	48.89	0.32	12.00%	12.8%
76	INTERNATIONAL BUS.MCHS.	127.21	2.60	10.86%	13.3%
77	INTEL	21.88	0.63	11.50%	14.9%
78	INTERPUBLIC GP.	8.91	0.00	15.67%	15.7%
79	IRON MNT.	24.98	0.25	14.14%	15.3%
80	JACOBS ENGR.	43.90	0.00	10.85%	10.9%
81	JOHNSON & JOHNSON	61.99	2.16	6.41%	10.4%
82	JANUS CAPITAL GP.	12.20	0.04	11.00%	11.4%
83	NORDSTROM	40.01	0.80	11.60%	14.0%
84	KELLOGG	53.55	1.50	9.42%	12.7%
85	KRAFT FOODS	29.47	1.16	7.45%	12.0%
86	KROGER	21.43	0.38	8.90%	10.9%
87	L3 COMMUNICATIONS	86.72	1.60	8.65%	10.8%
88	LEGG MASON	31.10	0.16	9.00%	9.6%
89	LOCKHEED MARTIN	81.28	2.52	8.38%	12.0%
90	LOWE'S COMPANIES	24.86	0.44	14.02%	16.2%
91	LIMITED BRANDS	25.59	0.60	13.07%	15.9%
92	MACY'S	22.10	0.20	9.43%	10.5%
93	MCDONALDS	68.76	2.20	10.16%	13.9%
94	MCKESSON	67.41	0.72	10.92%	12.2%
95	MOODY'S	23.56	0.42	10.37%	12.5%
96	MEDTRONIC	41.24	0.90	9.97%	12.5%
97	MASSEY EN.	36.59	0.24	15.07%	15.9%
98	MCGRAW-HILL	31.44	0.94	7.21%	10.6%
99	MEAD JOHNSON NUTRITION	50.87	0.90	9.70%	11.8%
100	3M	81.36	2.10	11.72%	14.8%

LINE	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
101	MERCK & CO.	34.64	1.52	5.57%	10.5%
102	MICROSOFT	27.62	0.52	8.55%	10.7%
103	M&T BK.	84.68	2.80	5.97%	9.7%
104	MICRON TECHNOLOGY	9.43	0.00	11.67%	11.7%
105	NEXTERA ENERGY	50.54	2.00	5.90%	10.4%
106	NISOURCE	15.60	0.92	2.63%	9.2%
107	NIKE 'B'	73.39	1.08	12.33%	14.1%
108	NORTHROP GRUMMAN	63.30	1.88	10.00%	13.5%
109	NORFOLK SOUTHERN	57.31	1.36	10.34%	13.1%
110	NATIONAL SEMICON.	14.42	0.32	11.33%	14.0%
111	NORTHERN TRUST	52.68	1.12	10.00%	12.5%
112	NORTHEAST UTILITIES	26.71	1.02	7.39%	11.8%
113	NEWELL RUBBERMAID	16.36	0.20	8.50%	9.9%
114	NEWS CORP.'A'	14.41	0.15	13.44%	14.7%
115	OMNICOM GP.	39.29	0.80	10.05%	12.4%
116	ORACLE	24.08	0.20	12.42%	13.4%
117	PAYCHEX	29.39	1.24	11.01%	16.0%
118	PEOPLES UNITED FINANCIAL	14.99	0.62	7.67%	12.4%
119	PACCAR	43.64	0.36	11.25%	12.2%
120	PG&E	41.66	1.82	7.27%	12.3%
121	PREC.CASTPARTS	119.60	0.12	10.20%	10.3%
122	PATTERSON COMPANIES	29.90	0.40	14.33%	15.9%
123	PEPSICO	64.04	1.92	8.20%	11.7%
124	PROCTER & GAMBLE	58.39	1.93	8.58%	12.4%
125	PROGRESS ENERGY	39.18	2.48	3.90%	11.0%
126	PERKINELMER	23.14	0.28	13.43%	14.9%
127	PALL	36.99	0.64	11.47%	13.5%
128	PINNACLE WEST CAP.	36.53	2.10	6.25%	12.8%
129	PRAXAIR	80.87	1.80	12.40%	15.1%
130	QWEST COMMS.INTL.	5.25	0.32	4.56%	11.4%
131	RYDER SYSTEM	43.62	1.00	14.03%	16.8%
132	ROBERT HALF INTL.	26.60	0.52	14.50%	16.9%
133	POLO RALPH LAUREN 'A'	85.85	0.40	11.33%	11.9%
134	ROPER INDS.NEW	59.27	0.38	14.40%	15.2%
135	ROSS STORES	55.01	0.64	14.36%	15.8%
136	RANGE RES.	46.95	0.16	9.67%	10.1%
137	RADIOSHACK	21.25	0.25	7.83%	9.2%
138	RAYTHEON 'B'	54.93	1.50	8.00%	11.1%
139	SCANA	37.54	1.90	4.92%	10.6%
140	SPECTRA ENERGY	21.64	1.00	10.56%	16.0%
141	SEALED AIR	21.37	0.48	6.77%	9.3%
142	SIGMA ALDRICH	54.88	0.64	9.87%	11.2%
143	J M SMUCKER	59.36	1.60	7.47%	10.6%
144	SOUTHERN	33.70	1.82	5.07%	11.2%
145	STAPLES	22.43	0.36	15.33%	17.3%
146	ST.JUDE MEDICAL	38.58	0.00	12.25%	12.2%
147	STATE STREET	41.08	0.04	10.00%	10.1%
148	SAFEWAY	23.16	0.48	9.17%	11.6%
149	STRYKER	54.91	0.60	12.14%	13.4%
150	AT&T	25.36	1.68	6.39%	14.0%
151	TECO ENERGY	16.04	0.82	6.67%	12.5%
152	TARGET	54.04	1.00	13.04%	15.3%

LINE	COMPANY	P_0	D_0	GROWTH	COST OF EQUITY
153	TIFFANY & CO	45.67	1.00	11.30%	13.9%
154	TJX COS.	44.92	0.60	14.00%	15.6%
155	THERMO FISHER SCIENTIFIC	52.78	0.00	11.30%	11.3%
156	T ROWE PRICE GP.	52.60	1.08	11.00%	13.4%
157	TOTAL SYSTEM SERVICES	15.22	0.28	8.90%	11.0%
158	TIME WARNER CABLE	53.63	1.60	12.54%	16.1%
159	TIME WARNER	31.64	0.85	12.55%	15.8%
160	TEXAS INSTS.	25.17	0.48	10.00%	12.2%
161	UNITEDHEALTH GP.	30.41	0.50	9.01%	10.9%
162	UNION PACIFIC	73.46	1.32	10.85%	13.0%
163	UNITED PARCEL SER.	63.99	1.88	12.37%	15.9%
164	UNITED TECHNOLOGIES	70.62	1.70	10.36%	13.2%
165	V F	80.59	2.40	10.60%	14.1%
166	VIACOM 'B'	34.30	0.60	9.04%	11.1%
167	VERIZON COMMUNICATIONS	26.92	1.90	7.33%	15.5%
168	WALGREEN	33.44	0.55	13.89%	15.9%
169	WISCONSIN ENERGY	50.49	1.60	9.52%	13.2%
170	WAL MART STORES	52.41	1.21	10.65%	13.4%
171	WESTERN UNION	16.91	0.24	11.61%	13.3%
172	XCEL ENERGY	21.15	1.01	6.43%	11.9%
173	DENTSPLY INTL.	33.94	0.20	11.67%	12.4%
174	YUM! BRANDS	40.95	0.84	12.44%	14.9%
175	ZIONS BANCORP.	24.82	0.04	9.33%	9.5%
176	Average				12.9%

Notes: In applying the DCF Model to the S&P 500, I include in the DCF analysis only those companies in the S&P 500 group which pay a dividend, have a positive growth rate, and have at least three analysts' long-term growth estimates. In addition, I exclude all companies in the I/B/E/S group of insurance companies. I also eliminate those companies with DCF results that varied from the mean by one standard deviation or more.

Notes:

D_0 = Latest dividend per Thomson Reuters.

d_0 = Latest quarterly dividend.

P_0 = Average of monthly high and low stock prices April, May, June 2010 per Thomson Reuters.

FC = Selling and flotation costs.

g = I/B/E/S forecast of future earnings growth June 2010.

k = Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs and market pressure (selling costs) as shown by the formula below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0(1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k - g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3×2, 3×2^2, 3×2^3, … This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1}. \qquad (3)$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\ S_n = a\ (1 - r^n) \quad .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1-r^n)}{(1-r)} \tag{4}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches $a \div (1 - r)$. Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \tag{5}$$

Application to DCF Model

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1-r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1-\frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k-g} = \frac{D_0(1+g)}{k-g}$$

as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

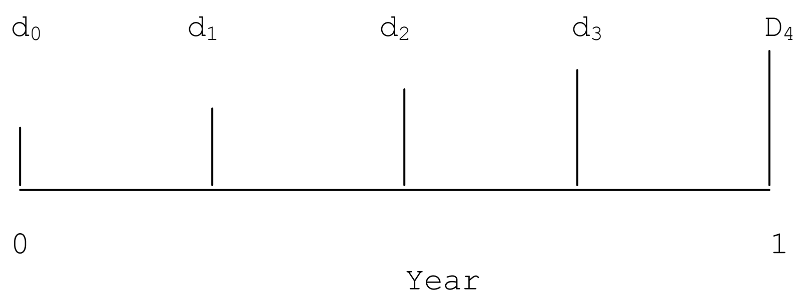
Figure 1

Annual DCF Model

$D_0 = 4d_0$ $\qquad$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $\qquad$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $\qquad$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and $\boldsymbol{k} > \boldsymbol{g}$, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for $\boldsymbol{k}$, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

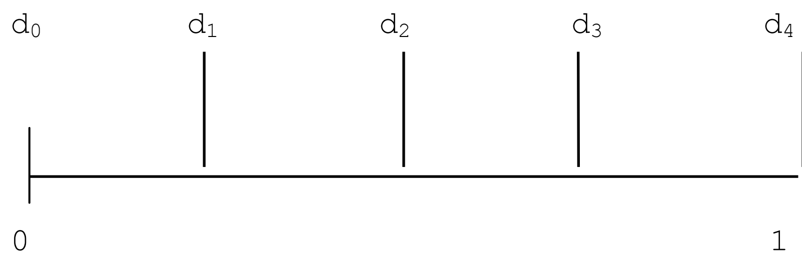
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

Quarterly DCF Model (Constant Dividend Version)

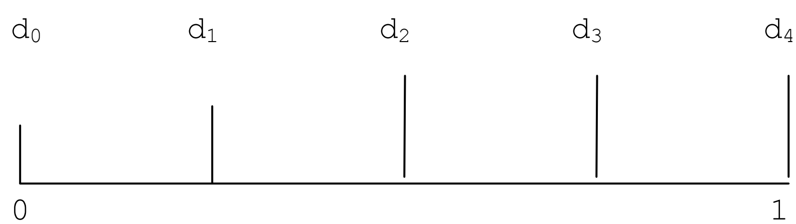
Case 1



Year

$$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$$

Case 2



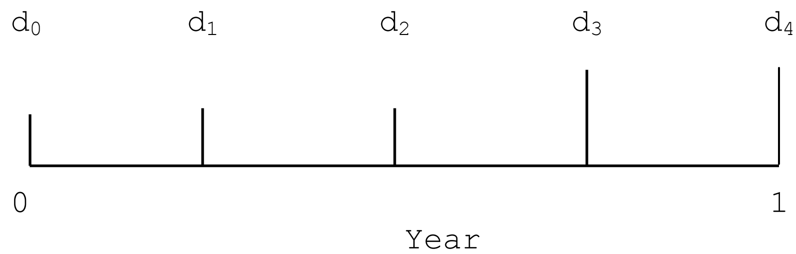
Year

$$d_1 = d_0$$

$$d_2 = d_3 = d_4 = d_0(1+g)$$

Figure 3 (continued)

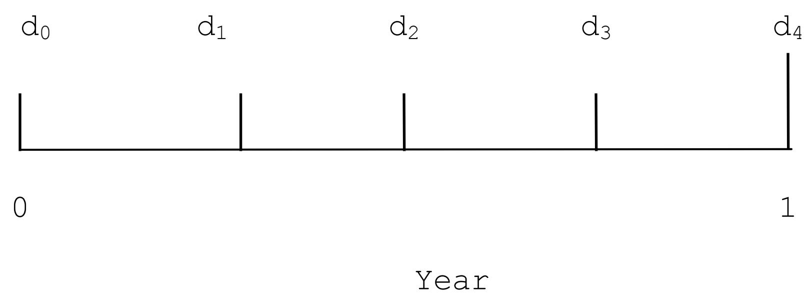
Case 3



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

Case 4



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1\ (1+k)^{3/4} + d_2\ (1+k)^{1/2} + d_3\ (1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1\ (1 + k)^{3/4} + d_2\ (1 + k)^{1/2} + d_3\ (1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k - g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \qquad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2010

Year	S&P 500 Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Price	Bond Return
2010	1,123.58	0.0203		$75.0275.02	
2009	865.58	0.0310	32.91%	68.43	17.43%
2008	1,380.33	0.0211	-35.19%	72.25	0.24%
2007	1,424.16	0.0181	-1.27%	72.91	4.59%
2006	1,278.72	0.0183	13.20%	75.25	2.20%
2005	1,181.41	0.0177	10.01%	74.91	5.80%
2004	1,132.52	0.0162	5.94%	70.87	11.34%
2003	895.84	0.0180	28.22%	62.26	20.27%
2002	1140.21	0.0138	-20.05%	57.44	15.35%
2001	1335.63	0.0116	-13.47%	56.40	8.93%
2000	1425.58	0.0118	-5.13%	52.60	14.82%
1999	1248.77	0.0130	15.46%	63.03	-10.20%
1998	963.35	0.0116	31.25%	62.43	7.38%
1997	766.22	0.0195	27.68%	56.62	17.32%
1996	614.42	0.0231	27.02%	60.91	-0.48%
1995	465.25	0.0287	34.93%	50.22	29.26%
1994	472.99	0.0269	1.05%	60.01	-9.65%
1993	435.23	0.0288	11.56%	53.13	20.48%
1992	416.08	0.0290	7.50%	49.56	15.27%
1991	325.49	0.0382	31.65%	44.84	19.44%
1990	339.97	0.0341	-0.85%	45.60	7.11%
1989	285.41	0.0364	22.76%	43.06	15.18%
1988	250.48	0.0366	17.61%	40.10	17.36%
1987	264.51	0.0317	-2.13%	48.92	-9.84%
1986	208.19	0.0390	30.95%	39.98	32.36%
1985	171.61	0.0451	25.83%	32.57	35.05%
1984	166.39	0.0427	7.41%	31.49	16.12%
1983	144.27	0.0479	20.12%	29.41	20.65%
1982	117.28	0.0595	28.96%	24.48	36.48%
1981	132.97	0.0480	-7.00%	29.37	-3.01%
1980	110.87	0.0541	25.34%	34.69	-3.81%
1979	99.71	0.0533	16.52%	43.91	-11.89%
1978	90.25	0.0532	15.80%	49.09	-2.40%
1977	103.80	0.0399	-9.06%	50.95	4.20%
1976	96.86	0.0380	10.96%	43.91	25.13%
1975	72.56	0.0507	38.56%	41.76	14.75%
1974	96.11	0.0364	-20.86%	52.54	-12.91%
1973	118.40	0.0269	-16.14%	58.51	-3.37%
1972	103.30	0.0296	17.58%	56.47	10.69%
1971	93.49	0.0332	13.81%	53.93	12.13%
1970	90.31	0.0356	7.08%	50.46	14.81%
1969	102.00	0.0306	-8.40%	62.43	-12.76%
1968	95.04	0.0313	10.45%	66.97	-0.81%
1967	84.45	0.0351	16.05%	78.69	-9.81%
1966	93.32	0.0302	-6.48%	86.57	-4.48%
1965	86.12	0.0299	11.35%	91.40	-0.91%

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2010

Year	S&P 500 Stock Price	Stock Dividend Yield	Stock Return	A-rated Bond Price	Bond Return
1964	76.45	0.0305	15.70%	92.01	3.68%
1963	65.06	0.0331	20.82%	93.56	2.61%
1962	69.07	0.0297	-2.84%	89.60	8.89%
1961	59.72	0.0328	18.94%	89.74	4.29%
1960	58.03	0.0327	6.18%	84.36	11.13%
1959	55.62	0.0324	7.57%	91.55	-3.49%
1958	41.12	0.0448	39.74%	101.22	-5.60%
1957	45.43	0.0431	-5.18%	100.70	4.49%
1956	44.15	0.0424	7.14%	113.00	-7.35%
1955	35.60	0.0438	28.40%	116.77	0.20%
1954	25.46	0.0569	45.52%	112.79	7.07%
1953	26.18	0.0545	2.70%	114.24	2.24%
1952	24.19	0.0582	14.05%	113.41	4.26%
1951	21.21	0.0634	20.39%	123.44	-4.89%
1950	16.88	0.0665	32.30%	125.08	1.89%
1949	15.36	0.0620	16.10%	119.82	7.72%
1948	14.83	0.0571	9.28%	118.50	4.49%
1947	15.21	0.0449	1.99%	126.02	-2.79%
1946	18.02	0.0356	-12.03%	126.74	2.59%
1945	13.49	0.0460	38.18%	119.82	9.11%
1944	11.85	0.0495	18.79%	119.82	3.34%
1943	10.09	0.0554	22.98%	118.50	4.49%
1942	8.93	0.0788	20.87%	117.63	4.14%
1941	10.55	0.0638	-8.98%	116.34	4.55%
1940	12.30	0.0458	-9.65%	112.39	7.08%
1939	12.50	0.0349	1.89%	105.75	10.05%
1938	11.31	0.0784	18.36%	99.83	9.94%
1937	17.59	0.0434	-31.36%	103.18	0.63%
1936	13.76	0.0327	31.10%	96.46	11.12%
1935	9.26	0.0424	52.84%	82.23	22.17%
1934	10.54	0.0336	-8.78%	66.78	29.13%
1933	7.09	0.0542	54.08%	79.55	-11.03%
1932	8.30	0.0822	-6.36%	70.67	18.23%
1931	15.98	0.0550	-42.56%	84.49	-11.63%
1930	21.71	0.0438	-22.01%	81.19	8.99%
1929	24.86	0.0336	-9.31%	83.95	1.48%
1928	17.53	0.0431	46.12%	86.71	1.43%
1927	13.40	0.0502	35.84%	83.28	8.92%
1926	12.65	0.0446	10.39%	80.81	8.01%
Average Return					
Common Stocks			11.29%		
A-rated Utility Bonds			6.61%		
RISK PREMIUM			4.68%		

Note: See Page 3 for an explanation of how stock and bond returns are derived and the source of the data presented.

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2010

Risk Premium Approach

Source of Data

Stock price and yield information is obtained from Standard & Poor's *Security Index Price Record*. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in 30 years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated Utility bond yield. The values shown on pages 1 and 2 are the January values of the respective indices.

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{Stock Return (2009)} = \left[\frac{\text{Stock Price (2010)} - \text{Stock Price (2009)} + \text{Dividend (2009)}}{\text{Stock Price (2009)}}\right]$$

where Dividend (2009) = Stock Price (2009) x Stock Div. Yield (2009)

Sample calculation of "Bond Return" column:

$$\text{Bond Return (2009)} = \left[\frac{\text{Bond Price (2010)} - \text{Bond Price (2009)} + \text{Interest (2009)}}{\text{Bond Price (2009)}}\right]$$

where Interest = $4.00.

Exhibit RB-13

PREFILED TESTIMONY
OF
DAVID APPEL

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE RATE FILING
BY THE NORTH CAROLINA RATE BUREAU
JANUARY 2011

I. QUALIFICATIONS AND SUMMARY

Q. Please state your name and present business address.

A. My name is David Appel, and my business address is 1 Pennsylvania Plaza, New York, NY.

Q. What is your occupation?

A. I am Director of Economics Consulting and a Principal with the firm of Milliman, Inc.

Q. What is Milliman, Inc?

A. Milliman (formerly Milliman & Robertson) is one of the nation's largest independently owned firms of actuaries and consultants. The company has more than 2400 employees, and operates offices in over 50 cities in the U.S., Europe, Asia and Latin America. Our clients number in the thousands: they include insurers, self-insured entities, Federal and State Governments, private corporations, non-profit organizations, unions, and many others. I am a Principal with the firm, and I am in charge of its Economics Consulting practice.

Q. Please describe your educational and employment history.

A. A complete statement of my educational, employment and academic credentials is included as Exhibit RB-14 filed with this testimony.

To summarize, I have a B.A. in economics from Brooklyn College, City University of New York, and M.A. and Ph.D. degrees in economics from Rutgers University. Prior to 1980, I was an instructor in economics at Rutgers University. For the following nine years, I was employed by the National Council on Compensation Insurance (NCCI), the nation's largest workers compensation insurance statistical, research and ratemaking organization. I joined NCCI as Research Economist in 1980, and ultimately became Vice

President for Research in 1985. In 1989, I joined Milliman, where I founded the economics consulting practice for the firm.

Q. Would you please describe some of your other professional activities?

A. Yes. Throughout my professional career, I have participated in a variety of academic and business activities related to insurance. I have been a member of the Board of Directors of the American Risk and Insurance Association, the leading learned society of insurance academics. I am currently a member of the editorial board of the Journal of Insurance Regulation (the official research publication of the National Association of Insurance Commissioners), as well as the journal Benefits Quarterly. I act as a peer referee for a number of scholarly journals in economics and insurance, and I maintain an active program of research and publication on issues of current interest in insurance economics. In addition, I was, for twelve years, an Adjunct Professor of Economics at Rutgers University.

Q. Have you ever published any papers or books?

A. Yes. In the last ten years I have authored many papers on various aspects of insurance that have been published in refereed books or scholarly journals. In addition, I have published a large number of papers in non-refereed journals as well. I have also co-edited three volumes of research papers dealing with various aspects of workers compensation and property-casualty insurance. My refereed publications are listed in Exhibit RB-14 filed with this testimony.

Q. Are you a member of any professional associations?

A. Yes. I am a member, and currently serve on the Board of Directors of the American Risk and Insurance Association, the leading association of insurance academicians. I am also an elected fellow of the National Academy of Social Insurance, a member of the panel of neutrals of the American Arbitration Association, and a certified arbitrator and umpire of ARIAS, the world's leading insurance and reinsurance arbitration society.

Q. Have you ever testified in insurance rate regulatory proceedings?

A. Yes. I have testified on many occasions in such proceedings, including several occasions in North Carolina in the past several years. A complete list is contained in Exhibit RB-14 filed with this testimony.

Q. What was the general nature of your testimony in these cases?

A. I have addressed a wide variety of insurance issues during public testimony, including such diverse topics as the impact of economic and demographic factors on insurance costs, the effects of regulation on insurance availability, the use of econometric and statistical models in insurance forecasting, and the use of modern financial theory in developing insurance prices. In North Carolina, my testimony in has tended to focus on matters relating to the cost of capital and the returns expected from the underwriting profit provisions selected for use in the rates. However in property rate filings, I have had substantial involvement in issues relating to risk and the net cost of reinsurance, hence my testimony has addressed these issues as well.

Q. Have you been retained by the North Carolina Rate Bureau as a consultant in this rate case?

A. Yes. I have been asked to consider the following specific matters in connection with this case:

1. Whether Dr. Vander Weide's analysis provides a reasonable estimate of the cost of capital.

2. Whether other factors – notably interest rate sensitivity and the small firm size typical of dwelling fire and extended coverage insurers in North Carolina – create additional sources of risk which affect insurers' cost of capital.

3. How the expected costs of reinsurance should be incorporated into the dwelling extended coverage insurance rates filed by the Rate Bureau and how those costs should be apportioned to regions within the state.

4. How the profits associated with underwriting dwelling extended coverage insurance in North Carolina should be apportioned to regions within the state.

5. How dwelling fire and extended coverage insurers in North Carolina should be compensated for bearing the risk to their capital associated with exposure to assessments by the North Carolina Insurance Underwriting Association (commonly called the "Beach Plan") and the FAIR Plan (hereinafter referred to jointly as the "Beach/Fair Plans").

6. The returns insurers would expect to earn from underwriting dwelling fire and extended coverage insurance in North Carolina, given that the filed underwriting profit provision is realized.

I have performed various studies and analyses on these matters.

Q. Before summarizing the conclusions of your analysis, I noticed that a number of issues the Rate Bureau asked you to address refer to both dwelling fire and extended coverage insurance, while several refer solely to dwelling extended coverage insurance. Can you please explain?

A. Yes. This rate filing pertains to both dwelling fire insurance and dwelling extended coverage (sometimes called "EC") insurance. However, fire and extended coverage cover different perils – as indicated by the name, fire covers solely the fire (and lightning) peril, while extended coverage covers a variety of other perils, most notably wind. Since North Carolinas is a hurricane exposed state, the insurance that covers the wind peril has substantially different risk characteristics than lines without such exposure. These different risk characteristics demand that fire and extended coverage be treated differently in certain aspects of the ratemaking exercise.

In this rate filing, the specific areas that relate solely to the catastrophe prone extended coverage insurance are the inclusion of the net cost of reinsurance in the rates, and the allocation of that cost, as well as the allocation of underwriting profit in the rates, to different regions within the state. In these areas only dwelling extended coverage is affected, hence in those sections of the testimony I refer to dwelling extended coverage only. It is also true however, that the occurrence of catastrophes occasions an additional cost in North Carolina, due to the possibility that insurers will be assessed for deficits in the state's Beach and Fair Plans. Although these deficits would occur because of the occurrence of hurricanes, the deficits will be assessed on all insurers in the state, proportional to their property insurance premiums in North Carolina. Since insurers are liable for assessments related to the fire insurance premiums written in the state, it is necessary to include a provision in the fire rates (along with the extended coverage rates) to cover these expected costs.

Aside from these specific areas, the remainder of my testimony pertains to both dwelling fire and dwelling extended coverage insurance.

Q. Now can you please summarize the conclusions you have reached in regard to the matters noted above?

A. Yes. I will summarize them in bullet form here, and then discuss them each more fully later in the testimony.

1. I have reviewed Dr. Vander Weide's cost of capital estimates, which rely on the two most widely recognized models used for this purpose, and find them to be reasonable. However, Dr. Vander Weide's estimates are based on the implicit assumption that insurers present investors with roughly average risk, relative to all possible investment activities. I believe that investors in the property-casualty insurance industry are subject to an above average degree of risk, and therefore I think it would be prudent to view Dr. Vander Weide's estimates as a conservative estimate of the return to which insurers are entitled.

2. I have considered the impact of two other factors on the risk and required return for insurers – interest rate sensitivity and firm size. As regards interest rate sensitivity, because of the high degree of financial leverage and the substantial share of medium and long term bonds in insurer asset portfolios, insurers are particularly subject to interest rate risk that cannot be diversified away. Based on my previous analyses, I have found that investors must be compensated for this risk in the form of an additional risk premium above that required for the average security. As regards firm size, I have on many occasions studied the size distribution of insurers in North Carolina and found that the firms providing insurance coverage in the state tend to be smaller than those used in Dr. Vander Weide's cost of capital analysis. Since there is conclusive evidence that, over the long run, smaller firms have earned higher returns, this finding must be considered evidence that investors expect higher returns from small firms.

   These analyses provide support for my opinion that Dr. Vander Weide's cost of capital estimates should be viewed as a conservative estimate of the return to which insurers are entitled.

3. I have considered the differential risk associated with underwriting dwelling extended coverage insurance in different regions within North Carolina, and have concluded that the risk due to catastrophe exposure is substantially greater in and around the coastal regions of the state. I have also considered the high cost of catastrophe reinsurance that is regularly purchased by property casualty insurance companies writing dwelling extended coverage insurance, and have concluded that a provision must be included in the rates to cover the cost of a typical catastrophe reinsurance program. Furthermore, I believe that it is appropriate to apportion this provision across regions of the state, proportional to the relative risk by region.

4. Even after the benefits of reinsurance are taken into account, the residual risk of writing dwelling extended coverage insurance in North Carolina may still differ across regions within the state. As a consequence, I believe that it is appropriate to allocate the statewide profit built into dwelling extended coverage rates across regions, proportional to the relative risk by region after consideration of reinsurance.

5. In addition to the risks attendant to the dwelling fire and extended coverage directly written by insurers in North Carolina, there is substantial additional risk to insurers attributable to the exposures insured in the Beach/Fair Plans. This risk is associated with the potential for assessments that can be imposed on insurers in the state, should the Beach/Fair Plans incur a deficit arising from their insurance operations. Insurers must be compensated for bearing this risk and, to address this situation, I have developed a procedure to incorporate a provision in the rates that compensates insurers in the state for this risk.

6. In order to test the underwriting profit provisions selected and filed by the Rate Bureau, I have estimated the returns insurers would expect to earn from North Carolina dwelling fire and extended coverage insurance assuming the filed underwriting profit provisions are fully earned, and assuming all of the other assumptions embedded in the rate calculations actually materialize. I am aware that North Carolina law provides that insurers are entitled to expect to earn a return equal to the returns of industries of comparable risk, and that in calculating that expected return, investment income from capital and surplus funds is not to be considered. I refer to that operating return as the statutory return. However, as is evident from the attached exhibits, I have estimated insurer pro forma returns both including and excluding expected investment income from capital and surplus. (I refer to the return including investment income on surplus as the total return.) I have done this to demonstrate that, if the filed underwriting profit provisions are actually realized, and even if investment income on surplus is considered, insurer returns will not be excessive. Obviously, if returns are not excessive including investment income from capital and surplus, they will be non-excessive excluding such income.

Based on my calculations, the selected underwriting profit provisions generate statutory returns on net worth of 7.8% for dwelling fire and 7.1% for dwelling extended coverage in North Carolina. In addition, the total return on net worth (i.e., including investment income on surplus) is 10.7% for dwelling fire and 10.5% for dwelling extended coverage. Since these returns, even those that include investment income on surplus funds, are near or below the lower bound of Dr. Vander Weide's range for the fair rate of return, I conclude that the underwriting profit provisions are clearly not excessive.

II. COST OF CAPITAL REVIEW

Q. You said your first assignment was to review Dr. Vander Weide's estimate of the cost of capital. Are you familiar with Dr. Vander Weide's approach to estimating the cost of capital in insurance rate cases?

A. Yes. I am aware of the methodology upon which Dr. Vander Weide relies to estimate the cost of capital and have reviewed it on a number of occasions in the course of previous rate cases in North Carolina. Dr. Vander Weide has used the most widely recognized and accepted models for this purpose, namely the Discounted Cash Flow (DCF) model and the risk premium method. These models, when taken together and properly applied to a reasonably selected data set, provide acceptable estimates of the cost of capital for regulated insurers.

Q. What has Dr. Vander Weide concluded with respect to the fair rate of return in this case?

A. Dr. Vander Weide has concluded that the fair rate of return for insurers is in the range of 10.3% to 13.2% on net worth as determined under generally accepted accounting principles (GAAP).

Q. In your opinion, is this an appropriate estimate of the required rate of return?

A. Yes, however as I indicated a moment ago, I believe that Dr. Vander Weide may have been conservative in his calculation of the required rate of return. Dr. Vander Weide has assumed that the property-casualty industry presents investors with average risk. However, based on my studies, I conclude the following:

1. There is evidence that the property casualty industry is considerably above average with respect to the volatility of the returns that it provides to investors. This higher volatility of returns makes the property-casualty industry an investment of above average risk.

2. Since investors require higher returns from smaller firms, and since the firms in Dr. Vander Weide's cost of capital analysis are significantly larger than the average property-casualty insurer in North Carolina, his approach tends to underestimate the true cost of capital for North Carolina dwelling fire and extended coverage insurers.

III. ADDITIONAL FACTORS AFFECTING RISK

Q. Your comments about additional risk factors suggest that Dr. Vander Weide's cost of capital may be conservative, or understated, for insurers writing insurance in North Carolina. Can you please elaborate on this?

A. Certainly. As mentioned earlier, I have considered whether other factors not addressed in the standard cost of capital analysis conducted by Dr. Vander Weide might indeed affect the risk and therefore the required return in this case. In fact, there were two such factors – interest rate risk and the small size of firms writing dwelling fire and extended coverage insurance in the state - that I have been studying for a number of years and which clearly increase the cost of capital, or required return, in this case. Based on analyses I have conducted for previous rate hearings in North Carolina, I have concluded that both these factors create additional risks that require additional compensation above that demanded for the average security. I will discuss these issues briefly below, beginning with interest rate risk.

Q. Please turn to the impact of interest rate sensitivity on insurers' risk and required return and describe your analysis.

A. I considered both the theoretical and empirical dimensions of this issue, and based on my analyses I have concluded that the high degree of financial leverage and large share of intermediate and long term bonds in insurer asset portfolios combine to create a significant exposure to interest rate changes. This high degree of interest rate risk causes property-casualty stock returns to have a high degree of volatility, which requires additional compensation above that demanded for the average security.

Q. You have made reference to the term interest rate risk. Can you please define this term?

A. Yes. Interest rate risk refers to the risk that the value of fixed income investments (such as bonds) will fluctuate with changes in interest rates. This means that there is a risk associated with holding bonds, particularly those with a relatively long term to maturity. While investments in equities are still considerably riskier than investments in long term bonds, as evidenced by the fact that returns to large company stocks have had a much higher mean and standard deviation than returns on long term government bonds over the past 80+ years, bonds investments impose risk as well.

Q. Does interest rate risk affect investments in property-casualty insurance stocks?

A. Yes. Property-casualty insurance companies invest large amounts of funds in bonds issued by both corporations and governmental bodies. The risk that investors face is that when interest rates change, the values of the bonds also change, and hence their investments in property-casualty stocks are subject to interest rate risk. This fact is widely recognized by the financial community. Since investors cannot diversify away interest rate risk, only the prospect of higher returns will induce them to purchase interest-sensitive stocks. That is, investors must be compensated for purchasing interest-sensitive stocks because they are increasing their exposure to interest rate risk. This is a risk separate and apart from the market risk investors face.

Q. Can you please explain what you mean by market risk?

A. Yes. As I mentioned earlier, investors prefer stability rather than volatility in their investment returns. While virtually all securities have a certain degree of volatility in their expected returns, part of the risk that is associated with that volatility can be eliminated through the process of diversification. The portion of risk that can be eliminated by diversification is termed diversifiable risk.

Market risk is the risk associated with movements in the overall stock market. It is not possible to eliminate this sort of risk by holding a diversified portfolio of stocks, because there are certain economic events which influence the returns on all stocks simultaneously. These are system-wide events that make the stock market move as a whole.

In general, risk that is not diversifiable is known as systematic risk. Systematic risk stems from events that take place on an economy-wide basis. Investors can only diversify away risks that have offsetting factors somewhere else in the economy. For instance, if one company has a bad year due to reasons specific to it alone, it is highly likely that another company will have a good year which will offset the bad performance.

That sort of risk is diversifiable. However, the risk associated with events that take place economy-wide without offsetting factors is not diversifiable. It is this risk that is referred to as systematic risk or market risk.

Q. Why is interest rate risk different from market risk?

A. Interest rate risk is a separate source of volatility for insurance stocks. Interest rates often change as a result of changes in expectations of future inflation. These changes primarily affect firms that hold what are called nominal assets and liabilities. Nominal assets and liabilities have cash flows that are fixed in nominal terms (for example, accounts receivable, most contracts, and bonds) and are thus subject to erosion in value due to inflation. On the other hand, the cash flows associated with manufacturing and service operations tend to fluctuate with the price level. Since most non-financial firms hold relatively few nominal assets and liabilities, their stocks are not particularly sensitive to changes in interest rates that are due to changes in expected inflation. Therefore interest rate risk adds additional risk to insurance stocks, above and beyond market risk, that is not diversifiable.

Changes in interest rates that are not associated with changes in expected inflation will affect all stocks. This accounts for the moderate degree of correlation between changes in long term interest rates and returns to common stocks. However, the fact that most stocks are not very sensitive to changes in interest rates that are due to changes in expected inflation means that interest rate risk is not fully captured in measures of market risk.

Q. Is it possible to measure interest rate risk?

A. Yes, and I have conducted a number of studies designed specifically to address this issue in the past several years. A more detailed discussion of these studies is available in the testimony I submitted with the 2003 auto rate filing.

Q. Can you please briefly summarize the principal conclusions of your work in this area?

A. Yes. Since insurer assets on average have a substantially longer financial duration than insurance liabilities, when interest rates change, the value of insurer equity is subject to potentially wide fluctuation. While the market risk for insurers as measured by beta is roughly average, the degree of interest rate risk to which the industry is exposed is considerably higher than average. Since this risk cannot be entirely diversified away, the overall risk associated with an investment in property/casualty insurance is greater than average. As a consequence, insurers are entitled to a rate of return above that allowed for the average risk investment in the U.S. economy.

Q. Have you also conducted an empirical study of the risks of investing in the property-casualty insurance industry?

A. Yes. As part of the work I performed in connection with the 2000 automobile insurance rate filing, I calculated the mean and standard deviation of the returns to investing in the property-casualty insurance industry, and compared them to the same statistics for investments in a portfolio of average risk common stocks (i.e., the S&P 500). In order to do this, I gathered data on prices, dividends, and number of shares outstanding from the December 31, 1998 edition of Compustat Research Insight. This data source contains up to 20 years of historical information on 141 property-casualty insurance stocks; to my knowledge, this is one of the largest collections of data on property-casualty insurance companies that has ever been assembled for this purpose. My studies show that the standard deviation of returns to investors in property-casualty insurance stocks was greater than the standard deviation of returns on the S&P 500 while the mean return was higher over the entire period from 1980 to 1998.

These data indicate that insurance stocks are more volatile, and hence riskier, than the average security in the economy. In addition, the higher than average returns for these securities indicate that investors have been compensated for this additional risk.

Q. Why are returns to investing in property-casualty insurance stocks more volatile than investing in the stocks that make up the Standard & Poor's 500?

A. I believe that there are three main reasons for this.

First, the high degree of financial leverage and mismatched durations of assets and liabilities contributes to the volatility of returns to investors in insurance stocks.

Second, the insurance industry is in the business of bearing risk. Individuals and corporations transfer to property-casualty insurers potential liability for a wide range of possible adverse events, ranging from property damage (including property damage from terrorism and catastrophes such as earthquakes and hurricanes) to professional liability. In light of the unforeseen events that can occur, and, in the recent past, actually have occurred, investors in property-casualty insurance stocks are subject to considerable risk.

Finally, insurance is in the unique position of being a highly competitive industry that is also subject to a high degree of regulation. This combination of regulation and competition creates an environment in which insurers are subject not only to the demands of the market but also to the pressures of the political process. There is substantial evidence that regulation can increase risk for a regulated enterprise, and when that is combined with an aggressively competitive industrial structure, risk is increased.

Q. You said that the combination of regulation and competition increased risk for insurers. Can you describe what you mean?

A. Yes. Traditionally, direct price and rate of return regulation has been imposed on industries known as "public utilities," such as generation and transmission of electric power, distribution of natural gas, provision of local water and sewer service and the like. Because of the nature of the production process, these industries are characterized as "natural monopolies," meaning that it is most efficient for a single producer to provide the service in question. In such circumstances, the state normally grants a monopoly to a single provider and then regulates that firm directly to prevent abuse of monopoly power.

Property-casualty insurance differs dramatically from this model. Rather than a single firm providing service, there are in most states literally hundreds of firms competing in the market, none of which typically have significant market power. These firms compete aggressively to increase market share and attract the best insureds by offering a variety of price and quality combinations that are best tailored to their business objectives. This vigorous competition provides discipline in the marketplace, and, when combined with direct rate of return regulation, the risk for insurers is increased.

I should note that in the past a number of competitively structured industries (such as airlines, trucking, and telecommunications) were subject to regulation, but in the past several decades there has been a movement to deregulate these activities. This is due in part to the widespread agreement that competition itself is an adequate regulator.

Q. You also said that you considered whether the size distribution of North Carolina insurers should impact the cost of capital in this case. Can you please describe this issue briefly and discuss its implications for this case?

A. Yes. It is a well established fact of empirical finance that small stocks tend to outperform large stocks. Ibbotson Associates, for instance, reports that firms in the ninth and tenth decile of stocks listed on the principal U.S. stock exchanges have outperformed the market as a whole by approximately 3.7 percentage points over the period 1926 to 2008, even after accounting for the fact that these firms have above average betas. Therefore an adjustment should be made to the cost of capital to the extent that the property-casualty insurance industry is composed of small stocks.

Q. Have you conducted any studies with respect to the significance of the small stock effect?

A. Yes. As with interest rate risk, I have conducted a number of studies of this issue in previous years, and in each instance I found that (1) investors have earned higher returns from small stocks than from large stocks, and (2) the insurers in Dr. Vander Weide's cost of capital analysis are among the largest companies in the U.S. economy. The insurers in Dr. Vander Weide's analysis are larger, on average, than the companies in the property-casualty insurance industry, and they are larger, on average, than the companies writing dwelling fire and extended coverage insurance in North Carolina.

These facts suggest that the cost of capital for insurers writing dwelling fire and extended coverage insurance in North Carolina should be higher than for those firms contained in Dr. Vander Weide's cost of capital analysis. This reaffirms my conclusion that the cost of capital that Dr. Vander Weide has presented is conservative.

Q. Without describing in detail the studies you have undertaken in the past, what are your conclusions from the evidence you have reviewed on firm size and investors' required returns?

A. There are two principal findings from my analysis of firm size, rates of return, and cost of capital:

1. There is conclusive evidence that, over the long run, smaller firms have earned higher returns, and this finding must be considered evidence that investors expect higher returns from small firms.

2. The firms in Dr. Vander Weide's cost of capital analysis are among the larger firms in the U.S. economy, and they are significantly larger than the average property-casualty insurer, both nationally and in the North Carolina dwelling fire and extended coverage insurance market.

In summary, the estimates from Dr. Vander Weide's cost of capital analysis should be viewed as a lower-bound estimate for property-casualty insurers writing North Carolina dwelling fire and extended coverage insurance. Based on these studies, other similar studies, and my own knowledge and experience, I am confident that a comparable study, conducted today, would show similar results.

Q. Can you please summarize your testimony on the cost of capital of the property-casualty insurance industry?

A. Yes. Professor Vander Weide has assumed that the property-casualty insurance industry presents investors with risks comparable to the average investment in equities. My analysis has shown that property-casualty insurance stocks are subject to additional volatility due to interest rate sensitivity, and are relatively small when compared with the broad cross section of publicly traded firms in the U.S. economy. Since these additional risks require compensation in the form of a higher return, I conclude that Professor Vander Weide has been conservative in his calculation of the required rate of return on property-casualty insurance investments.

IV. NET COST OF REINSURANCE & REGIONAL ALLOCATION OF STATEWIDE PROFIT

Q. In your summary, you said you considered how the net cost of reinsurance should be included in dwelling extended coverage rates in North Carolina, and how the profit in the rates should be allocated proportional to risk. Can you please discuss your evaluation of these issues?

A. Yes. I have previously addressed these issues in homeowners, mobile homeowners and dwelling fire/extended coverage rate filings in North Carolina, where I have recommended that the indicated rates be developed to include the net cost of reinsurance. I will briefly outline the problem and then discuss each of the issues separately.

To begin with, dwelling extended coverage is one of several lines of insurance that is subject to the potential for catastrophic loss. In such lines (homeowners, earthquake, allied lines and other property coverages), individual catastrophic events can result in enormous losses, far in excess of what the typical insurer could bear. Thus, in these lines of business, insurers routinely purchase reinsurance to manage their exposure to extreme events, and it is appropriate to provide for the cost of this reinsurance in setting rates for these lines of insurance. Since ratemaking is often done on a direct basis, as compared to a net of reinsurance basis, an explicit adjustment must be made to provide for the cost of reinsurance.

Second, the exposure to catastrophic loss varies substantially by geographic region within North Carolina. It is well known that the coastal counties in the state are subject to severe exposure to the hurricane peril, while the interior regions to the west are subject to considerably less exposure. Since the need for reinsurance is a function of the degree of catastrophe exposure, the cost of reinsurance should reflect such regional differences as exist within the state. Accordingly, in considering the cost of reinsurance in primary rates, we allocate the statewide cost across regions, proportional to risk.

Finally, even after the consideration of reinsurance, substantial differences in risk across regions remain. Therefore, to the extent that the underwriting profit in the rates is intended to compensate the insurer for risk, that profit should also be spread regionally proportional to the risk that remains after the benefits of reinsurance are considered. Similar to the cost of reinsurance, the profit in the statewide rates is also allocated across regions, proportional to the residual risk that remains after the benefits of reinsurance.

Q. You mentioned that direct ratemaking does not include the cost of reinsurance. Can you please explain?

A. Yes. Direct ratemaking is an approach that is sometimes used when making insurance rates on an industrywide basis (where the terminology “direct” refers to an analysis done without consideration of reinsurance). While this approach is reasonable for some lines of insurance (such as auto insurance), it fails to reflect the market realities associated with writing property insurance in catastrophe prone environments such as North Carolina. In these environments, primary insurers are required to purchase reinsurance to manage their exposure to catastrophe risks, and such reinsurance comes at a substantial net cost.

Q. Why does reinsurance come at a substantial net cost?

A. Reinsurers cover the riskiest portion of the insurance loss distribution – the events that occur only rarely but impose extremely high costs. In order to provide a credible promise to pay claims resulting from extreme events, reinsurers carry substantially more capital per unit of exposure than primary insurers. This capital has a cost, which is included in the premiums paid for the reinsurance in the market. Since basic economic and actuarial principles require all costs of the risk transfer to be included in the price of insurance, and since reinsurance is required to efficiently manage catastrophe risk, its net cost should be included in the rates charged for dwelling extended coverage insurance.

Q. Did you perform any analysis to address this issue?

A. Yes. To address this issue and provide for a rate that will cover all the costs of the insurance transaction, I developed a procedure to include the "net cost of reinsurance" as an expense in the direct dwelling extended coverage rates in North Carolina. (By net cost of reinsurance, I mean the expense and profit components of the reinsurance rate, since the loss costs are already included in the calculation of the direct premium.) This procedure is conceptually identical to that employed in Florida, where insurers make rates using direct losses and expenses, but then add in a provision which covers the cost (to the primary insurer) of the reinsurer's profit and expense.

Q. Please describe your analysis.

A. To implement this procedure, I adopted the standard ratemaking assumption used in North Carolina – i.e., that there is a single aggregate company that is the composite of all carriers in the state. I then assumed that this company maintains a reinsurance program that is typical of property insurers in North Carolina, with provisions as follows:

- An attachment point equal to the one in ten year hurricane loss event (i.e., the 90th percentile of the statewide loss distribution from AIR). The attachment point is the loss level at which the reinsurer begins to share in the loss.

- A limit equal to the difference between the attachment point and the one in a hundred year event (the 99th percentile of the statewide loss distribution). The limit is the maximum loss amount which the reinsurer will pay under the contract.

- A 5% coparticipation in the reinsured layer. (Coparticipation refers to a provision where the primary insurers share a specified percentage of the reinsured loss).

- Mandatory reinstatement of the original limit following insured events

These provisions were based on a review of publicly available information on the reinsurance programs of a number of the largest writers in North Carolina and knowledge gained from my work with actuaries, risk managers and reinsurance brokers familiar with these types of exposures.

Given the program described above and the AIR statewide aggregate loss distributions, I then determined the amount of losses that would be subject to reinsurance coverage, as a share of the total hurricane losses in the state. Based on the projected reinsured losses, I then developed a "competitive market" reinsurance premium, following a series of steps that are described below. Before describing the individual steps in that process, however, I should note two considerations in connection with the use of the AIR model in this filing.

First, in developing the hurricane loss estimates for use in this filing, AIR ran two separate models, one based on 100,000 iterations of its model using the full 100+ year history of hurricane activity as the basis for projected hurricane frequency, and the other based on 50,000 iterations of the model using an alternative version known as the warm sea surface temperature (WSST) model. The WSST model reflects the higher frequency and severity of hurricanes in periods of warmer sea surface temperatures such as currently exist.

When calculating the base rates for this filing, the Rate Bureau relied upon the standard AIR model to estimate the level of hurricane losses to be included in the rates. However, I am aware that reinsurers are currently relying on models that use substantially higher hurricane frequencies and/or severities to estimate expected losses for property exposures, to reflect the widespread recognition that we are currently in a phase of increased activity in the hurricane cycle. Since it is appropriate to rely on the models used in the reinsurance market in setting the price of reinsurance, and later, in allocating that cost to zone, I relied on the AIR WSST model loss estimates in this portion of my analysis.

Second, I also note that in projecting losses using either model, AIR's estimates reflect the phenomenon of "demand surge." Demand surge refers to the fact that, subsequent to the occurrence of a large natural catastrophe, the prices of labor and materials required to repair or replace damaged property tend to increase because of the surge in demand for such resources. This is exactly what one would expect given the underlying dynamics of supply and demand; with resources (particularly labor) that are relatively fixed in supply in the short run, a rapid increase in demand is expected to increase prices. This phenomenon has been observed following natural disasters such as Hurricane Andrew, the Northridge earthquake, Hurricane Katrina and the like. In estimating the damages attributable to catastrophic events, it is appropriate to include all factors that affect the level of expected losses, including, of course, factors that affect the price of the resources required to respond to those events.

Given the reinsurance program described above and the AIR loss distributions, I then determined the amount of losses that would be subject to reinsurance coverage, as a share of the total hurricane losses in the state. Based on the projected reinsured losses, I then developed a "competitive market" reinsurance premium, as follows:

- I loaded the reinsured loss for LAE, using the Incurred Loss/Incurred LAE ratio from the filing.

- I assumed that the reinsurer incurred fixed expenses equal to 30% of losses plus LAE (which results in a reinsurer expense provision of 15.5% of premium).

- I assumed the reinsurer set an underwriting profit provision that would yield a return on net worth, after consideration of all investment income, of 12.0%. I determined the reinsurer's net worth such that the reinsurer premium to surplus ratio would be .30, the historical average ratio for professional reinsurers from Best's Aggregates and Averages over the past several years.

Having determined the reinsurance premium that a competitive reinsurance market would produce under the assumptions described above, I then subtracted expected losses and LAE from the premium to leave the net cost of reinsurance. This latter amount was then divided by projected direct written premium to determine the expected net cost of reinsurance as a percent of direct premium, which turned out to be 33.3% (comprised of the reinsurance expense cost of 7.3% and the cost of reinsurer capital of 26.0%). In the next step, that amount was added as an expense in the rates.

Q. Are the results of your calculations shown in an exhibit?

A. Yes. Exhibit RB-15 shows the calculations giving rise to the estimated net cost of reinsurance of 33.3%. This exhibit contains two pages; the first page shows the derivation of the statewide premium, part of which is required to determine the reinsurer's premium. The second page shows the derivation of the reinsurance premium, based on the portion of insured hurricane losses and the reinsurer's capitalization and required return. As can be seen in the second page, the reinsurance premium is 47.0% of statewide direct premium, while the net cost of reinsurance is 33.3% of premium. (The net cost of reinsurance is the total premium less the primary insurer's loss and expense recovery, which is equal to the reinsurer's expense cost and the cost of the reinsurer's capital).

Q. Do you believe that your calculations accurately reflect the net cost of reinsurance in North Carolina?

A. Yes. Over the past several years during which time I have been performing this analysis, I have compared my own estimates to the actual costs incurred by insurers, and I have generally found that my estimates are somewhat below the amounts paid by insurers to obtain reinsurance coverage. As a consequence I would contend that my estimates are quite conservative, in that they likely understate the true net cost of reinsurance.

Q. In your opinion, it is appropriate to include the net cost of reinsurance in dwelling extended insurance rates in North Carolina?

A. Yes. Insurers in North Carolina incur a substantial cost for bearing the risk of dwelling extended coverage insurance in the state. The market cost of bearing that risk (whether the risk is retained by the insurer or transferred to a reinsurer) must be included in the rates. In the analysis described above, I have developed a competitive market reinsurance premium that reasonably reflects the net cost of reinsurance to the primary insurer. Since this is a legitimate cost of the risk transfer inherent in the purchase of dwelling extended coverage insurance, it should properly be included in the rates.

Q. You said that the next step was to allocate the cost of reinsurance across regions in the state proportional to risk. Can you please discuss your analysis of this issue?

A. Yes. As discussed above, it is widely agreed that dwelling extended coverage insurance in North Carolina is subject to substantial catastrophe exposure due to the possibility that hurricanes and other serious windstorms may strike the state. However that catastrophe potential differs significantly from region to region within the state; in coastal counties, for example, the hurricane risk is far higher than it is in the interior mountainous regions to the west. As a consequence, the risk to which insurers and reinsurers are exposed differs across the state as well. Since the need for reinsurance arises from the catastrophe exposure, regional differences in relative risk should be taken into account when determining the allocation of reinsurance costs within the state.

Q. How did you analyze the regional differences in risk and allocate reinsurance costs to region?

A. To address this issue, I developed a general simulation model that calculates regional differences in risk within North Carolina. Based on the model results, costs can be allocated to different regions in proportion to the risk each region contributes to the state as a whole. I used this model to allocate both the cost of reinsurance as well as the underwriting profit to the different dwelling extended coverage territories in the state. As a general rule, since the risk in the coastal areas is far greater than the risk in the interior, the cost of reinsurance and the required profit in those territories is greater, as a percent of premium, than in the less risky territories.

In broad terms, my approach involved the following steps:

(1) Determine appropriate measures of risk;
(2) Build a Monte Carlo simulation model to calculate the risk measures in each territory;
(3) Allocate statewide total profit proportional to risk.

I describe each of these steps briefly below. However, before outlining the general model, I should note that I did not conduct the analysis at the level of the individual territory, but rather at the "zone" level. That is, I aggregated the territories into three distinct zones for purposes of allocating profit: Zone 1 - coastal (territories 7, 8, 48, 49 and 52)[1]; Zone 2 - central (territories 32, 34, 41, 44, 45, 46, 47 and 53); and Zone 3 - mountains (territories 36, 38, 39, 57 and 60).

(1) Determine Appropriate Measures of Risk: To select appropriate risk measures, I reviewed relevant citations from the actuarial and economics literature relating to this issue. Based on this review, I selected three bases for measuring risk: variance of losses, standard deviation of losses and probability of ruin. Each of these has merit, and support in the literature, as a measure of relative risk across the various zones within the state.

(2) Build a Simulation Model to Calculate Risk by Zone: Calculating risk by zone using the measures noted above involves estimating the distribution of annual aggregate losses by zone. To do this, I built a two part simulation model that separately estimates hurricane and non-hurricane losses. For the hurricane loss estimates, AIR ran its proprietary model, and provided estimated losses by territory, which were then aggregated to the zone level (rather than the territory level of aggregation used elsewhere in ratemaking). For non-hurricane losses, I built a Monte Carlo simulation model to estimate the annual aggregate loss distribution across all non-hurricane perils. I then summed hurricane and non-hurricane losses from each iteration to derive the distribution of total losses by zone. From this distribution, I was able to calculate the variance and standard deviation of losses, as well as the probability of ruin.

    I should note that I applied this model separately to both the reinsurer and the primary insurer, for two distinct purposes. In the case of the reinsurer, my intention was to allocate the net cost of reinsurance – that is, the reinsurance expense cost and the cost of reinsurer capital – to zone proportional to the risk borne by the reinsurer. In the case of the primary insurer, my intention was to allocate the underwriting profit in the rates – that is, the primary insurer's compensation for risk – to zone, proportional to the residual risk retained by the primary insurer after considering the losses ceded to the reinsurer.

(3) Allocate Reinsurance Costs and Statewide Profit Proportional to Risk: For the variance and standard deviation methods of measuring risk, I calculated the values

[1] When the analysis was performed, the territories in Zone 1 were identified as territories 5, 6, 42 and 43. These territories have been changed in this filing to territories 7, 8, 48, 49 and 52, but the total area and exposures in these territories have not changed, and my analysis is not impacted by this change.

of both variables in each zone, and then took the sum across all the zones as an estimate of the statewide total value. (The assumption that the statewide total variance is the sum of the individual zone variances implies that there is zero correlation of losses across zones, while the assumption that the total standard deviation is the sum of the individual zone standard deviations implies that there is perfect correlation of losses across zones. The actual result is clearly somewhere in between the two.) This was done separately for the reinsurer, based on ceded losses, and for the primary insurer, based on net (retained) losses. Each zone was then allocated a share of the net cost of reinsurance and total profit based on its share of total risk. Under the probability of ruin method, I ranked total losses (hurricane plus non-hurricane) across all iterations from largest to smallest, and found the iteration in which actual losses were equal to the losses that would produce ruin (i.e., the level of losses that would just exceed the sum of premium net of expenses, plus investment income and surplus).[2] I then determined the proportion of those losses attributable to each zone, and allocated reinsurance costs and profit according to those percentages.

As I mentioned earlier, it is important to emphasize that the departure point for the risk based allocation process is the total cost of reinsurance and required profit in the state as a whole. That is, only after these amounts are determined are they then allocated to zone. Thus, there is no additional profit or return resulting from our analysis, and the allocation is independent of the methodology used to determine the cost of reinsurance or the overall profit.

Q. Can you please describe the results of your analysis?

A. The details of the analysis are contained in Exhibit RB-16 attached to this testimony. This exhibit, comprised of three pages, shows the allocation of reinsurance costs and statewide profit to zones depending on the selected allocation method. (The total statewide profit and reinsurance cost was determined in Exhibit RB-15, described above.)

The underwriting profit, cost of reinsurer capital and reinsurer expenses for each zone, all as a percentage of premium, based on the three methods just described, are summarized in the table below.

[2] I actually used the losses from the average of the 50 iterations surrounding the single iteration that just gave rise to ruin, so as to avoid any anomalous results that might occur due to the random nature of the simulation.

Summary: Reinsurance Costs and Profit by Zone

		Zone 1	*Zone 2*	*Zone 3*	*Sum*
Standard	Underwriting Profit and Contingencies	11.0%	9.8%	7.7%	10.5%
Deviation	Reinsurer Profit (Percent)	27.4%	25.9%	15.9%	26.0%
Method	Reinsurer Expenses (Percent)	8.3%	5.3%	2.0%	7.3%
	Total Profit plus Reinsurance Cost	**46.7%**	**41.0%**	**25.6%**	**43.8%**
	Underwriting Profit and Contingencies	12.3%	2.8%	1.0%	10.5%
Variance	Reinsurer Profit (Percent)	29.9%	10.9%	2.9%	26.0%
Method	Reinsurer Expenses (Percent)	7.7%	7.6%	2.6%	7.3%
	Total Profit plus Reinsurance Cost	**49.9%**	**21.3%**	**6.4%**	**43.8%**
Probability	Underwriting Profit and Contingencies	11.2%	9.6%	6.1%	10.5%
of Ruin	Reinsurer Profit (Percent)	28.3%	23.4%	10.0%	26.0%
Method	Reinsurer Expenses (Percent)	8.2%	5.6%	2.2%	7.3%
	Total Profit plus Reinsurance Cost	**47.6%**	**38.5%**	**18.4%**	**43.8%**

Because each of the aforementioned methods has support in the risk measurement literature, and the results under the various models are reasonably similar, I averaged the per zone total profit and reinsurance cost factors from the three methods. The final values used in the calculations were then selected by the Rate Bureau.

Q. Have you recommended regional profit differentials in any other lines of insurance when you have testified in North Carolina?

A. Yes, but only in mobile homeowners and homeowners, since the other lines of insurance subject to the jurisdiction of the Rate Bureau are not subject to such extreme regional variation in risk. In the case of dwelling extended coverage insurance, however, it is important for reasons of equity and economic efficiency to address this question forthrightly.

Q. Does your methodology result in a higher overall cost than would have been the case without the allocations?

A. No, it does not; the allocation method itself is simply a manner in which to spread the costs across policyholders consistent with risk. Thus, it does not impose any additional costs on North Carolina policyholders in the aggregate; rather it simply apportions the costs in a manner that is consistent with the risks different policyholders impose.

Q. In your opinion, is it appropriate to allocate statewide profit and reinsurance costs proportional to these measures of risk?

A. Yes. It is both intuitively and empirically obvious that the relative risk of dwelling extended coverage insurance varies geographically. As such, the cost for bearing that risk should be allocated proportional to the measurement of the risk. The three measures selected for this analysis have broad support in the actuarial and economic literature, and in my opinion are quite reasonable for the purpose to which they are put.

V. COMPENSATION FOR RISK OF ASSESSMENTS FROM BEACH/FAIR PLANS

Q. You said earlier that you also considered the risks faced by insurers in North Carolina associated with the exposures insured in the Beach/Fair Plans. Can you please explain this issue?

A. Yes. In addition to the risks attendant to the dwelling fire and extended coverage insurance directly written by insurers in North Carolina, there is substantial additional risk to insurers attributable to the exposures insured in the Beach/Fair Plans.

The Beach/Fair Plans serve as the so-called "residual market" for residential property insurance in the state. Residual markets exist to provide access to insurance coverage for policyholders who cannot obtain such coverage from insurers in the voluntary market. In states which have significant exposure to catastrophes, property insurance residual markets often grow to represent a very sizable portion of the total insured risk in the exposed regions of the state. This has been the experience in North Carolina, where the exposure growth in the Beach Plan has been very high over the past decade.

The Beach/Fair Plans provide either wind only or full residential property insurance coverage to North Carolina policyholders. The Plans use the premium from those policies to fund the future losses and expenses attributable to the coverages they write (including the purchase of reinsurance, issuance of catastrophe bonds and the like). The Beach/Fair Plans can accumulate surplus and that surplus is available to pay losses in the event that the losses exceed collected premiums plus investment income. However, if their surplus is exhausted, then additional losses (up to a $1 billion limit for the Beach Plan but unlimited for the Fair Plan) are passed through to all insurers in the state in the form of assessments based upon each insurer's total property writings in North Carolina. (Beyond the $1 billion Beach Plan limit, additional losses are passed through directly to policyholders statewide.) Even if an insurer does not write property insurance in North

Carolina's beach and coastal areas, it is nevertheless subject to any assessment by the Beach/Fair Plans due to its writings in other areas of North Carolina.

This risk of assessment has increased dramatically due to the growth in the Beach Plan in recent years. This growth in the Beach Plan is attributable to numerous factors, including the expansion of the Beach Plan territory, the addition of homeowners coverage to the coverages available in the Beach Plan, and the increase in the number and value of insured properties in the beach and coastal areas of North Carolina.

This risk of assessment is real and substantial, and insurers must be compensated for this additional risk to their capital. To address this situation, I have developed a procedure to incorporate a provision in the rates that compensates insurers for this risk.

Q. Can you please explain the procedure you developed?

A. Yes. The model I developed for this purpose involves two steps; the first is to quantify the magnitude of the exposure itself, and the second is to determine the fair compensation to be paid to insurers for bearing that risk.

To quantify the magnitude of the exposure, I obtained information from the Beach and Fair Plans regarding their actual financial position as of 3/30/2010, including data on existing exposures, written and earned premiums, expected losses and expenses, accumulated surplus, investment income and the like. I used that information to project each plan's accumulated surplus as of 9/30/2010 that would be available to pay hurricane losses for the 2010 storm season. I then obtained the AIR model runs used by the Beach/Fair Plans to estimate hurricane losses, and for each iteration of the AIR model, I estimated the amount of losses that would be covered by reinsurance and the remaining losses that would have to be funded either from the plans' accumulated surplus, through assessments on property insurers in the state, or ultimately through assessments on North Carolina property insurance policyholders. I then subtracted the accumulated surplus of the plans from the losses remaining after reinsurance, limited the assessable losses due to Beach Plan exposures to $1 billion, and then calculated the average of that result across all iterations of the model. This represents the expected value of the losses that would have to be funded through assessments to property insurers.[3]

As mentioned earlier, this amount represents the risk to insurers' capital associated with the exposure to Beach/Fair Plans assessments. The next step is to develop a method of measuring the fair compensation to insurers for bearing this risk.

Q. Can you please explain how you measured the compensation for bearing this risk?

[3] I note that in most years, there is no assessment attributable to hurricane losses, since the modeled losses are less than the Plans' capacity. However, in between 1% and 2% of the modeled years, losses exceed the sum of available premiums, investment income, reinsurance recoveries and accumulated surplus, and insurers are assessed for the first $1 billion excess in the Beach Plan and all of the excess in the Fair Plan.

A. Yes. To measure the fair compensation for bearing this risk, I relied on data regarding the market price of catastrophe risk, taken from the market for insurance linked securities. Insurance linked securities (ILS) are securities (bonds, warrants and the like) that have payoffs that are virtually identical to reinsurance. Investors purchase such securities at significant yield premiums to risk free bonds, because they are exposed to loss of principal and interest if certain "insured events" occur.

Q. Can you explain how such securities work in practice?

A. Certainly. As an example, consider an insurer that issues $100 million of a bond with a provision that, for every dollar of loss from an Atlantic hurricane in excess of $1 billion, one dollar of the bond would not have to be repaid. Since the investor in that bond would effectively be paying for up to $100 million of hurricane losses, such a security would be the functional equivalent of a reinsurance contract that provides $100 million in coverage excess of a $1 billion attachment point.

Now, with respect to the interest to be paid by the insurer on this bond, assume investors demand a premium of 10% in excess of the risk free rate in order to purchase such a security (because of the high degree of risk associated with the potential loss of principal and interest). This risk premium implies that the insurer would have to pay $10 million in interest in excess of the risk free rate to induce investors to purchase such securities, which is equivalent to paying a premium of $10 million in excess of the risk free rate for $100 million of reinsurance. This kind of information can be very illuminating in connection with evaluating the risk premiums required to bear catastrophe risk.

Q. What kind of information is available in these markets that can help you to assess the fair compensation for bearing catastrophe risk?

A. Markets for ILS have been growing in recent years, as they provide a financially efficient method of transferring risk. While smaller than reinsurance markets, they can provide extremely useful data about the cost of risk, because they reflect estimates of the pure cost of risk transfer, unencumbered by insurance specific issues (such as expenses, capital requirements, required returns, regulation and the like).[4]

Lane Financial, LLC is a firm that specializes in and is the most prominent analyst of insurance linked securities. In April of each year, Lane publishes a data base that accumulates a variety of useful information that can help to evaluate the fair compensation for bearing catastrophe risk. For each ILS in the market, Lane publishes the following data: the yield on the security; the excess return over LIBOR (the risk free

[4] While ILS markets are still relatively small, they represent some 18% of worldwide catastrophe reinsurance capacity.

rate)[5]; the probability that the security will suffer a loss; and the expected value (or average) loss anticipated on the security. These data provide the foundation for my analysis of the proper compensation for bearing the risk of Beach/Fair Plans assessments.

I first define several terms that will prove useful in this discussion. The "*yield spread*" is simply the difference between the yield on the particular ILS and LIBOR. For example, in the case I cited above (where a $100 million bond had a provision that, for every dollar of hurricane loss in excess of $1 billion, one dollar of the bond would not have to be repaid) investors demanded a premium of 10% in excess of the risk free rate. In that case, the yield spread was 10% (or 1000 basis points), which implies that the insurer would have to pay $10 million in interest in excess of the risk free rate to induce investors to purchase such securities

Now assume that expected distribution of hurricane losses is such that this security had an average annual loss of $1 million, meaning that, based on the probability and amount of hurricane losses of varying sizes, an investor would anticipate having an average loss of $1 million per year. This is termed the "*expected loss*." Since the investor in this example receives compensation of $10 million in excess of the risk free rate for bearing the risk of loss, the "expected profit" to the investor is $9 million (the yield in excess of the risk free rate minus the expected losses).

Finally, I define a term known as the "*profit multiple*," which is the ratio of expected profit to expected loss – in this case $9 million divided by $1 million, or a profit multiple of 9.0. The profit multiple provides an estimate of the compensation investors require to bear catastrophe risk, insofar as it tells us what returns investors require in order to take on the risk of loss from a catastrophic event. One particularly important feature of this variable is that it is a measure of compensation per dollar of expected loss; given the Beach/Fair Plan assessments to which insurers are exposed, the profit multiple can be used to develop an estimate of the fair compensation for bearing such risk. This is the measure of risk I rely upon in evaluating the fair compensation for insurers whose capital is exposed to Beach/Fair Plans assessments.

Q. Before you explain exactly how you used this information, is it true that all ILS have yield spreads that are 10.0 times, or profit multiples that are 9.0 times, their expected loss?

A. No. This value fluctuates over time, with changes in perceived risk in the market, and across securities with a variety of different characteristics. In my example we had a bond with an attachment point of $1 billion and an expected loss of $1 million, but each of the securities traded in capital markets has different attachment points and limits, and different probabilities and amounts of expected loss. As you would expect, those securities that have more volatile exposures have larger risk premiums relative to expected loss than those with less volatility.

[5] LIBOR is the London Inter Bank Offer Rate, which is the rate at which banks lend to each other, and is the traditional international financial metric for the risk free rate.

Q. How do you use the data on ILS to develop the fair compensation to insurers for bearing the risk of Beach/Fair Plans assessments?

A. First, to get a more precise estimate of the risk premia in capital markets, I compiled the data on profit multiples for all ILS issued on U.S. exposures in the last four years[6]. However, as I mentioned earlier, each ILS has a different profit multiple, so I grouped these multiples into six groups based on the probability of loss on the security. (As mentioned, those securities with very low probabilities of loss tend to have much more volatile and hence riskier profiles, and as such require higher compensation.)[7] I then computed the weighted average profit multiple within each probability interval for all ILS issued on U.S. exposures in the past four years.

Next, I obtained information from the Beach/Fair Plans on the distribution of hurricane losses, based on the AIR model runs using the most current exposures for the plans. For each iteration of the AIR model, I estimated the hurricane losses that would be ceded to reinsurers (using the actual reinsurance purchased by the Plans for the 2010 storm season) and the amount of those losses that would be retained by the Beach/Fair Plans. Based on this analysis I was able to determine the expected value of hurricane losses retained by the Beach/Fair Plans in excess of their assumed reinsurance program, as well as the distribution of those losses within probability layers.

Finally, to determine the fair compensation for bearing this risk, I determined the amount of losses that would exceed the Beach/Fair Plans' capacity, and thus would be assessed to voluntary insurers in the state[8]. For each dollar of such assessments, I multiplied the expected loss by the appropriate profit multiple (given the probability interval in which the losses reside). The product of the expected losses by interval or layer and the appropriate profit multiple for the layer represents the fair compensation insurers should receive for bearing such risk.

Q. Have you developed any exhibits that provide the details of these calculations?

A. Yes. Exhibit RB-17 contains eight pages of information required to develop projections of the fair compensation for bearing Beach and Fair Plans assessment risk.

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[6] Since the Lane LLC report comes out in April, it includes bonds issued in the first quarter of the current year and those bonds are being included in addition to all those issued between 2006 and 2009.

[7] The securities with very low probabilities of loss are those that insure against the largest and least frequent events, such as 1 in 250 year hurricanes and earthquakes. Although the probability that such a loss occurs is very small, if it does occur, the loss is enormous. This means that the security has very high volatility, which demands a very high return.

[8] Only the first $1 billion of Beach Plan loss in excess of surplus is assessable to voluntary insurers. Any amount in excess of the first $1 billion is ultimately paid by property policyholders through surcharges on their property premiums. All losses in excess of surplus in the Fair Plan are assessed to voluntary insurers.

The first page of Exhibit 17 shows the derivation of the total capital available to the Beach and Fair Plans for the 2010 storm season. This is based on the actual members' equity as of 3/31/2010 along with an estimate of the increase in equity attributable to the plans' operations through 9/30/2010. Estimates of the capital available to pay losses for the 2010 storm season are done separately for the residential Beach Plan accounts, the commercial Beach Plan accounts and the Fair Plan[9].

As shown on RB-17, page 1, I have estimated the Beach Plan will have almost $731 million of capital available to pay losses from the 2010 storm season and the Fair Plan will have almost $26 million.

Continuing, Page 2 of Exhibit RB-17 shows the weighted average ILS profit multiples based on all ILS issued in the last four years.[10] For example, for securities with probabilities of loss ranging from, say, 2% to 5%, the average profit per dollar of expected loss was 4.38. For securities with the lowest probability of loss (less than 0.4% or less than a 1 in 250 year event), which are those that "cover" the storms that cause the largest amount of insured loss but which have the lowest probability of occurrence, the average profit multiple was 15.70. This means that for securities with that high a degree of risk, investors received compensation of nearly $16 per dollar of expected loss.

Page 3 of Exhibit RB-17 displays a summary of the Beach/Fair Plan reinsurance program for the 2010 storm season. Although the Beach and Fair Plan are separate legal entities, they purchase their reinsurance together in the same contract.

In order to determine the fair compensation to voluntary insurers of bearing the risk of assessments, I need to determine which ILS layers contain losses that will be funded by assessments on voluntary insurers. The Beach Plan accounts for losses and assesses voluntary insurers separately for each account, while the Fair Plan has only one account.[11] The Beach Plan can only assess voluntary insurers a maximum of $1 billion for any deficits resulting from a single calendar year across all accounts. Any amounts needed to pay claims in excess of the assessable amounts are to be collected through surcharges to property insurance policyholders statewide. The reinsurance contracts apply to the combined losses of all Beach Plan accounts and the Fair Plan.

For each iteration of the AIR model, the losses are segregated into the 7 ILS layers[12] separately by account (Beach Residential, Beach Commercial, and Fair) and actual reinsurance contracts are applied to identify losses covered by the reinsurance contracts

[9] The Beach Plan captures and publishes surplus separately by account because the voluntary insurer assessments and participation ratios vary by account, while the Fair Plan does not have separate accounts or separate participation ratios.
[10] The data includes all issuance of bonds from 2006 through March 31, 2010.
[11] The Beach Plan has four separate accounts: Beach-Residential, Coastal-Residential, Beach-Commercial and Coastal-Commercial. For simplicity I have combined the two residential accounts and two commercial accounts in my calculations.
[12] The layers include the 6 ILS layers and a seventh layer for losses from each event that are less than the 1 in 10 year event.

by layer[13]. The remaining losses are then segregated between the amount covered by capital, the next $1 billion of Beach Plan losses to be covered by assessments on voluntary insurers and finally any additional amounts in the Beach Plan to be covered by surcharges on property policyholders' premiums. The expected losses associated with each event are accumulated in these categories for each of the ILS layers. In the Fair Plan, all non-reinsured losses in excess of the available capital are to be assessed to voluntary insurers. Although I apply the reinsurance contracts and the $1 billion limit to commercial losses, no expected commercial hurricane losses are included in my calculations of the fair compensation for exposure to assessments for residential lines of business.

Continuing, Page 4 of RB-17 provides a summary of the AIR Model hurricane losses for Residential Beach Plan exposures by ILS layer, disaggregated by who pays for the losses (Surplus, Private Reinsurance, Assessments on voluntary insurers or surcharges on policyholders). Each event is segregated into these categories separately and the data on the exhibits represents the average over all events. For example, in the layer from the 1 in 20 to the 1 in 50 year events, the layer would attach for Beach Plan residential losses of $943.6 million and exhaust at losses of $2,338.3 (a layer of $1,394.8). On average $828.3 million of the $1,394.8 would be covered by private reinsurance purchased by the Beach Plan, $521.0 million would be assessed to voluntary insurers and $45.5 million would result in policyholder surcharges.[14] Those Residential Beach Plan losses which will be assessed to voluntary insurers fall into three layers: 1 in 10 to 1 in 20, 1 in 20 to 1 in 50, and 1 in 50 to 1 in 100.

Turning now to Page 5, the expected losses from all events are displayed by layer. The total expected losses and those associated with losses that will be paid through assessments of voluntary companies are both displayed. Finally, to determine the fair compensation for bearing this risk, I multiplied the expected loss associated with assessments by the appropriate profit multiple (given the probability interval in which the losses reside). The product of the expected losses by interval or layer and the appropriate profit multiple for the layer represents the fair compensation insurers should receive for bearing such risk, which amount to $118.74 million from Beach Plan residential accounts.

Pages 6 and 7 of Exhibit RB-17 provide the same analysis for the Fair Plan as pages 4 and 5 did for the Beach Plan, with the proviso that the Fair Plan does not have the $1 billion assessment limit. The result of this analysis is that the market based compensation for losses insurers are exposed to from Fair Plan operations is $33.69 million. Assuming that 70% of the Fair Plan assessment base is residential insurance, this implies that

[13] Reinsurance is prorated by account based on total event losses by account.

[14] Although not intuitively obvious, there are some losses covered by policyholder surcharges in this layer and some losses covered by assessments to voluntary insurers in the next higher layer. For each event, the assessments to voluntary insurers will come before any policyholder surcharges, but for some events the amount of losses in the Beach Plan exceeds the $1 billion limit on voluntary insurer assessments within the layer, while for other events the $1 billion limit is not exceeded until the next layer. This occurs because the split between Beach Plan losses and Fair Plan losses can vary significantly by event.

$23.58 million (70%*$33.69 million) of the Fair Plan compensation must be collected from residential policyholders.

The final step in this calculation is to determine the appropriate provision to be included in the rates to compensate insurers for the risk of Beach and Fair plan assessments. This provision, expressed as a percent of premium, is developed on page 8 of Exhibit RB-17. (I note that these calculations reflect only the residential portion of the Plans' deficits.) Since assessments for Beach/Fair Plans losses are applied to all property insurance lines in the state, the bottom block on Exhibit RB-17, page 8 shows the development of a charge that will produce an amount of revenue equal to the total required compensation $142.32 million. As shown therein, that charge amounts to 5.3% of total property insurance premium in the state. This is the value that is added to the otherwise determined premium to develop the final rate level in the state.

Q. Did the passage of HB 1305 in 2009 have an impact on the provision to compensate insurers for their risk of Beach/Fair Plan assessments?

A. Yes, as explained previously, the Beach Plan can only assess voluntary insurers up to a maximum of $1 billion for deficits incurred in any calendar year. Prior to the passage of HB 1305 the assessment exposure was unlimited. I have used the same techniques described above to determine the appropriate compensation for bearing the risk of assessments from the Beach and Fair Plan if the $1 billion limitation enacted by HB 1305 had not been enacted. The fair compensation in that event would be 21.0% instead of the 5.3% developed with the $1 billion limitation in place. Thus, HB 1305 had a significant impact in reducing the residential property insurance indications.

Q. In your opinion, is it appropriate to include the 5.3% compensation for assessment risk provision in dwelling fire and extended coverage insurance rates in North Carolina?

A. Yes, not only is it appropriate, it is necessary in order that dwelling fire and extended coverage insurance rates are fair and reasonable to insurers. Since insurers are exposed to the risk of Beach/Fair Plans assessments as a result of writing voluntary market dwelling fire and extended coverage insurance in the state, they are entitled to receive fair compensation for bearing that risk. The model I have developed relies on a well established and widely accepted measure of compensation to determine a provision that will fairly reward insurers for bearing this additional risk to their capital.

VI. PROJECTED RETURN ATTRIBUTABLE TO INSURANCE OPERATIONS

Q. Earlier you said that you had calculated the statutory return insurers would expect from underwriting dwelling fire and extended coverage insurance in North Carolina. Have you conducted such an analysis?

A. Yes, I have. I developed a model using traditional insurance profitability analyses and have calculated the statutory returns on equity that would be expected to arise assuming that actual underwriting and investment results materialize exactly as projected in this filing. The results are contained in Exhibits RB-18 and 19 filed with this testimony.

Q. What do you mean when you use the term pro forma in that exhibit in connection with rate of return?

A. I use this term to indicate that the rate of return presented in these exhibits is based on a series of assumptions regarding such inputs as underwriting profit, investment gain, leverage and the like. If these assumptions actually materialize, then the "pro forma" rates of return calculated in the exhibits will prevail. However, to the extent that these assumptions are not realized, the rate of return will differ from that calculated in the exhibits.

Q. Can you please now describe the components of the model you developed?

A. Yes. The model really consists of a single page that calculates the rate of return on equity attributable to undertaking the insurance activity. It sets forth estimates of income derived from underwriting, installment fees and investment of reserves and estimates of costs, comprised of losses, expenses and taxes. This exhibit is supported by several other exhibits which provide calculations of investment yield rates, tax rates, premium to surplus and net worth to surplus ratios, and installment fee income.

Q. Can you now please describe the principal elements of the rate of return analysis?

A. Yes.

1. Underwriting profit is the difference between earned premiums and projected incurred losses and expenses. This provision was selected by the appropriate committees of the Rate Bureau.

2. Installment fee income is projected based on historical installment revenues, taking into consideration the most recent information on the installment fee program.

3. Taxes are calculated assuming that the regular corporate tax rate applies to statutory underwriting (plus installment fee) income, and that an additional tax liability applies due to the reserve discounting and revenue offset provisions that are applicable to property casualty insurers. Taxes on investment income are calculated assuming that the current statutory tax rates apply to the various classes of investment income earned.

4. Investment gain on the insurance transaction is estimated as the product of an investment yield rate and the investible funds available from loss, loss adjustment expense and unearned premium reserves (i.e., policyholder supplied funds). The investment yield rate is derived as the average of the "embedded yield" and the "current yield," based on the actual portfolios of securities held by insurers. This estimated yield rate includes income from interest, dividends, real estate, and other assets, as well as realized capital gains. The investible funds in this calculation are estimated using the well known ISO State-X model, with one modification as described below.

Q. In previous testimony in North Carolina, you identified certain changes you made to the traditional rate of return analysis that is performed using this model. Did you continue these changes for this year's filing?

A. Yes. I removed the reduction of investible funds by the amount of agents' balances from the ISO State-X calculation. However, it continues to be true that the funds represented by agents' balances are not available for investment by insurers. Therefore, in the rate of return calculation, the investment income from this modified State-X calculation is reduced by the investment income attributable to agents' balances. This calculation recognizes (1) that the majority of agents' balances represent premiums not yet paid by insureds because of installment payment plans, and hence is unavailable for investment and (2) that for the small minority of agents' balances that is premiums collected by agents but not yet remitted to the companies, the investment income on that premium is additional compensation to the agents and a cost to the companies as part of the insurance transaction.

In addition, I adjusted the trended loss, LAE and fixed expense ratios to reflect the proposed rate change. That is to say, I have divided the trended loss and expense ratios at present rates by one plus the proposed rate change to reflect the change in these ratios that occur when rates are changed.

Q. Could you please clarify how the underwriting profit provision contained in the rate filing was determined?

A. Yes. The issue of how the Rate Bureau determines the underwriting profit and contingency factor has routinely arisen in rate hearings in North Carolina over the past several years. Although it is evident from my exhibits that the Rate Bureau selects an underwriting profit and contingency provision to be included in the rates, there has been lengthy cross examination on this issue in every rate hearing in recent memory. Therefore, to clarify this matter, I will briefly discuss the procedure used by the Rate Bureau to determine the underwriting profit and contingency factor that is included in the proposed rates.

As part of the process of preparing a property insurance rate filing, the Property Rating Sub-Committee of the Rate Bureau meets to review data and determine values for a number of the important components of the proposed rates. One of these components is the underwriting profit factor. To determine this value, a procedure is followed in which I provide the committee with the estimated returns on equity (both statutory returns as well as returns adjusted to include investment income on surplus) associated with alternative underwriting profit provisions, and the committee then selects a provision after considering the cost of capital that has been developed by Prof. Vander Weide. Thus, the process is best described as one in which I test alternative underwriting profit provisions, and the committee selects a value based on these tests.

Q. How do you know what values of the underwriting profit provision to test?

A. I have been performing this type of analysis on behalf of the Rate Bureau for many years, and I am quite familiar with the dynamics of these models. Therefore, it is relatively easy to know the general range of values around which the underwriting profit is likely to fall. Normally, I will select approximately five or six values of the underwriting profit provision to test, that comprise a range of perhaps two to three percentage points, and the committee typically selects a value within that range. (For example, for this filing, I believe I tested underwriting profit provisions for dwelling fire and extended coverage in one half percentage point increments ranging from 8.0% to 11.0%, and the committee selected values of 9.5% for each line.) Of course, if the committee is not satisfied with the range of values I propose, I provide the returns associated with alternative values proposed by the committee.

Q. From what you've said, it appears that the Rate Bureau *selects* an underwriting profit provision, rather than *deriving* such a provision from the cost of capital. Is that correct, and if so, isn't it true that actuarial standards of practice require that the underwriting profit provision be *derived* from an underlying cost of capital?

A. It is correct that the Rate Bureau committee selects an underwriting profit provision and then tests whether that provision results in an expected rate of return on net worth that is consistent with the cost of capital. However, despite what has been suggested in the past by DOI witnesses, it is *not true* that actuarial standards of practice require that an underwriting profit be derived from the cost of capital. In fact, that issue is addressed explicitly in Actuarial Standard Of Practice (ASOP) #30, entitled "Treatment of Underwriting Profit and Contingency Factors and the Cost of Capital in Property/Casualty Insurance Ratemaking." Section 3.1 of that ASOP states the following:

> <u>Estimating the Cost of Capital and the Underwriting Profit Provision</u> – Property/casualty insurance rates should provide for all expected costs, including an appropriate cost of capital associated with the specific risk transfer. This cost of capital can be provided for by estimating that cost and translating it into an underwriting profit provision, after taking leverage and investment income into

> account. Alternatively, the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital. The actuary may use any appropriate method, as long as such method is consistent with the considerations in this standard.

The procedure utilized by the Rate Bureau is exactly the approach articulated in this section (i.e., "the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital").

Q. Could you please clarify how you selected your investment yield rate and premium to surplus ratio?

A. Yes. To select the investment yield rate, I was asked by the Rate Bureau to compute the average of what are known as the "embedded" and "current" yields, where each was based on the actual asset portfolios insurers currently hold. There has been a long-standing debate regarding the choice between embedded and current yields in insurance profitability calculations. Since the Commissioner himself adopted an approach of averaging the embedded and current yields in his 1994 automobile decision (and in his decision in the 1996 case, he selected a yield which approximated the yield obtained from this approach), the Rate Bureau has chosen to follow that methodology since that time.

To estimate the embedded yield, I calculated the ratio of investment income divided by average invested assets and added to that an estimate of the ten year average ratio of realized capital gains to invested assets. The sum of these two is the estimated embedded yield.

To estimate the current yield, I determined the yields available in today's capital markets for the portfolio of securities currently held by the property-casualty insurance industry. I then calculated a weighted average of these yield rates based on the proportion of assets held by the industry in each of the various securities such as stocks, bonds, real estate and the like.

As far as the premium to surplus ratio is concerned, I also relied on information which reflects the actual degree of leverage for insurers writing dwelling fire and extended coverage insurance in North Carolina. The premium to surplus ratio I used is the ten year average premium to surplus ratio for the top 30 company groups which wrote dwelling fire and extended coverage insurance in North Carolina in each of those years.

Q. Can you please provide the results of your calculations regarding the projected rate of return to the insurance transaction if your underlying assumptions are realized?

A. Yes. I estimate that insurers in North Carolina should expect to earn statutory returns on net worth of 7.8% for dwelling fire insurance and 7.1% for dwelling extended coverage insurance in North Carolina. In addition, the total return on net worth (i.e., including investment income on surplus) is 10.7% for dwelling fire and 10.5% for dwelling extended coverage. While the statutory returns are well below the lower bound of Dr. Vander Weide's range for the cost of capital, the total return falls within (albeit at the lower end of) that range.

Q. Are there any factors that might impact the realization of these projected returns?

A. Yes. In order for the aggregate industry to achieve the returns projected in these exhibits, every assumption in the model must be realized exactly. However, even if every other projection in the filing is exactly realized, the industry will still not realize these projected returns because the filing does not reflect the current surplus position of the aggregate industry. For the sake of stability in the ratemaking process, the premium to surplus ratios used in my calculations are based on long term historical data. The most recent data show that the aggregate industry writing dwelling fire and extended coverage insurance in North Carolina has more surplus in relation to premiums that the historical averages used in my calculations. Therefore, even if all other assumptions were realized exactly, the calculated rate of return would overstate the returns the aggregate industry would reasonably expect.

VII. CONCLUSION

Q. Based on the studies and analyses you have performed, have you come to any conclusions regarding the underwriting profit provision, net cost of reinsurance provision and compensation for assessment risk provision that have been filed by the Rate Bureau as part of the filing in this case?

A. Yes. Based on my evaluation of Dr. Vander Weide's cost of capital estimates, my consideration of insurer specific risk characteristics, and my estimation of projected and expected returns, I believe that the filed underwriting profit provision complies with North Carolina law and that the return expected to be realized by insurers will not be excessive. In addition, based on my analyses of the cost of reinsurance and the required compensation for the risk of Beach/Fair Plan assessments, I believe that my specific estimates of the net cost of reinsurance and the required compensation for assessment risk are both reasonable and not excessive. Finally, assuming that the actuarial estimates in the filing are reasonable, it is my opinion that including the filed underwriting profit provision, net cost of reinsurance provision, and compensation for assessment risk provision will produce rates that are just, reasonable and not excessive, inadequate or unfairly discriminatory.

Q. Does this conclude your testimony?

A. Yes, it does.

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PROFESSIONAL EXPERIENCE:

1989 to present	**MILLIMAN, INC.** Principal & Director - Economics Consulting Responsible for the formation, development and management of a national consulting practice in insurance economics.
1980 to 1989	**NATIONAL COUNCIL ON COMPENSATION INSURANCE** Economic and Social Research Division
1985 to 1989	Vice President
1983	Assistant Vice President Responsible for all economic and social research of NCCI
1982	Director of Economic and Social Research
1981	Senior Research Economist
1980	Associate Research Economist
1976 to 1997	**RUTGERS UNIVERSITY**
1981-97	Associate of the Graduate Faculty, Department of Economics, Newark, New Jersey
1981-93	Teach variety of graduate courses including: Microeconomic Theory, Industrial Organization, Public Finance
1978-80	Instructor, Department of Economics, New Brunswick, New Jersey
1976-78	Adjunct Instructor, Department of Economics, Newark, New Jersey

EDUCATION:

1980	Ph.D., Economics, Rutgers University
1976	M.A., Economics, Rutgers University
1972	B.A., Economics, Brooklyn College, CUNY
	Certified ARIAS Arbitrator and Umpire
	Member: AAA Panel of Neutrals
	Fellow: National Academy of Social Insurance

PAPERS AND PUBLICATIONS

"Comment on Jaffee and Russell" in Deregulating Property-Liability Insurance, J. David Cummins, Editor, Brookings Institution Press, Washington, DC, 2002

"Dynamic Financial Analysis of a Workers Compensation Insurer", CAS Call Papers Program, 1997 (with Susan Witcraft and Mark Mulvaney)

"The Impact of Managed Care on Workers Compensation Claim Costs," in a volume of conference proceedings published by the Workers' Compensation Research Institute, September 1994, (with Philip Borba).

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"Sex, Marital Status, and Medical Utilization by Injured Workers'", Journal of Risk and Insurance, Vol. LIV, No. 1, March 1987, (with John Worrall and Richard Butler)

"The Impact of Workers' Compensation Benefits on Low Back Claims" in Clinical Concepts in Regional Musculoskeletal Illness, Nortin M. Hadler, ed. (Boston: 1986, Grune and Stratton), (with John Worrall)

"Workers' Compensation and Employment: An Industry Analysis" in Disability and the Labor Market: Economic Problems, Policies and Programs, M. Anne Hill and Monroe Berkowitz, eds., (Ithaca:1986 ILR Press), (with James Lambrinos)

"Some Benefit Issues in Workers' Compensation", in Workers' Compensation Benefits: Adequacy, Equity, Efficiency. (Ithaca:1985 ILR Press), (with John Worrall)

Workers' Compensation Benefits: Adequacy, Equity, Efficiency. (co-editor with John Worrall), (Ithaca:1985 ILR Press)

"Survivorship and the Size Distribution of the Property-Liability Insurance Industry", Journal of Risk and Insurance, October 1985, (with John Worrall and Richard Butler).

"Regulating Competition-The Case of Workers' Compensation Insurance", Journal of Insurance Regulation, (with James Gerofsky), June 1985.

"The Wage Replacement Rate and Benefit Utilization in Workers" Compensation Insurance", Journal of Risk and Insurance, September 1982 (with John Worrall)

"Property Damages", in Joseph Seneca and Peter Asch, The Benefits of Air Pollution Control in New Jersey, Center for Coastal and Environmental Studies, Rutgers University, 1979

WORKING PAPERS

"Workers' Compensation Pricing: The Role of Policyholder Dividends" (with David Durbin)

"The Impact of Lifetime Work on Mortality: Do Unisex Pensions Matter?" (with Richard J. Butler)

"Regulatory Survival: Rate Changes in Workers' Compensation" (with Richard J. Butler and John D. Worrall)

"Framing, Firm Size and Financial Incentives in Workers' Compensation Insurance" (with Richard J. Butler and John D. Worrall)

"Application of NAIC Profitability Models to Long Tailed Lines of Insurance" (with James Gerofsky)

INVITED PRESENTATIONS

Chicago, IL , March 17, 2010
CAS Ratemaking Seminar
“Logic, Fallacies and Paradoxes in Risk/Profit Loading in Ratemaking: A Socratic Dialogue”

Chicago, IL , March 16, 2010
CAS Ratemaking Seminar
“Quantifying Risk Loads for Property Catastrophe Exposure”

Las Vegas, NV, March 10, 2009
CAS Ratemaking Seminar
“Using Catastrophe Bonds to Infer Risk Loads/Profit Margins/Reinsurance Costs”

Boston, MA, March 17, 2008
CAS Ratemaking Seminar
“Using Catastrophe Bonds to Infer Risk Loads/Profit Margins/Reinsurance Costs”

Pinehurst, North Carolina, May 21, 2007
Workers Compensation Insurance Organizations Annual Meeting
“Enterprise Risk Management: What Is It and Why Is It Important?”

Salt Lake City, Utah, March 13, 2006
CAS Ratemaking Seminar
“Including Reinsurance Costs in Primary Insurance Rates”

New Orleans, Louisiana, March 11, 2005
CAS Ratemaking Seminar
“Including Reinsurance Costs in Primary Insurance Rates”

Philadelphia, Pennsylvania, March 11, 2004
CAS Ratemaking Seminar
“The Consideration of Risk Loads and Reinsurance Costs in Primary Insurance Ratemaking”

New York, New York, December 12, 2003
Goldman Sachs Insurance Conference
“Interest Rate Changes and Insurance Underwriting”

San Antonio, Texas, March 28, 2003
CAS Ratemaking Seminar
"The Consideration of Risk Loads and Reinsurance Costs in Primary Insurance Ratemaking"

San Antonio, Texas, March 27, 2003
CAS Ratemaking Seminar
"Rate of Return Models in Insurance Ratemaking"

San Diego, California, May 20, 2002
CAS Annual Meeting
“The Actuary as an Expert Witness”

Tampa, Florida, March 7, 2002
CAS Ratemaking Seminar
"Parameterizing Rate of Return Models in Insurance Ratemaking"

Chicago, Illinois, December 10, 2001
NAIC Meeting
“The Impact of Proposition 103 in California”

Kansas City, Missouri, April 30, 2001
NAIC Meeting
“Personal Lines Regulation”

Las Vegas, Nevada, March 12, 2001
CAS Ratemaking Seminar
"Parameterizing Rate of Return Models in Insurance Ratemaking"

Washington DC, January 18, 2001
Brookings Institution Conference on Insurance Regulation
“Auto Insurance Experience in California”

Bermuda, September 14, 2000
Ace Insurance Worldwide Actuarial Conference
“Rate of Return Models In Property Casualty Insurance Ratemaking”

Orlando, Florida, June 9, 1998
Florida Managed Care Institute Annual Conference
"Issues in Integrated Health Care"

Seattle, Washington, July 21, 1997
CAS Dynamic Financial Analysis Seminar
"Dynamic Financial Analysis of a Workers Compensation Insurer"

Boston, Massachusetts, March 14, 1997
CAS Ratemaking Seminar
"Discounted Cash Flow Models in Insurance Ratemaking"

East Lansing, Michigan, July 15, 1996
National Symposium on Workers Compensation
"Managed Care in Workers Compensation"

New Orleans, Louisiana, March 20, 1996
Global Business Research Seminar: Partnerships Between Insurers and Providers
"Integrating the Data Systems"

Orlando, Florida, November 15, 1995
Global Business Research Seminar: Documenting Savings From Managed Care
"Evaluating Savings From Managed Care"

Orlando, Florida, October 27, 1995
Self Insurance Association of America Annual Meeting
"Managed Care in Workers Compensation: A Magic Act or Humbug?"

San Diego, California, October 16, 1995
Global Business Research Seminar: Documenting Savings From Managed Care
"Technical Issues in Measuring Savings From Managed Care"

Durham, North Carolina, September 6, 1995
North Carolina HMO Association Annual Meeting
"Workers Compensation in North Carolina: Risks and Opportunities for HMO's"

Washington, DC, May 22, 1995
Global Business Research Seminar: Outcomes for Workers' Compensation Managed Care
"Measuring and Reporting the Savings"

Orlando, Florida, April 13, 1995
NCCI Annual Meeting
"Managed Care in Workers Compensation"

Phoenix, Arizona, April 3, 1995
Casualty Actuarial Society Seminar on Profitability
"Rate of Return Models - Selecting the Parameters"

New Orleans, Louisiana, March 16, 1995
Casualty Actuarial Society Ratemaking Seminar
"Discounted Cash Flow Models for Insurance Ratemaking"

Orlando, Florida, March 14, 1995
Standard & Poor's Rating Conference
"Consolidation in the Property/Casualty Insurance Industry"

Minneapolis, Minnesota, October 11, 1994
Casualty Actuarial Society Seminar on Medical Cost Containment
"Managed Care and Workers' Compensation"

Toronto, Ontario, August 22, 1994
American Risk and Insurance Association Annual Meeting
"Current Issues in Workers' Compensation"

Boston, Massachusetts, May 17, 1994
Casualty Actuarial Society Annual Meeting
"Standard Of Practice on Profit and Contingency"

Hartford, Connecticut, April 20, 1994
University of Connecticut Blue Cross/Blue Shield Symposium
"24 Hour Coverage - What Will It Involve"

Atlanta, Georgia, March 10, 1994
Casualty Actuarial Society Ratemaking Seminar
"Cash Flow Models for Insurance Ratemaking"

Cambridge, Massachusetts, March 2, 1994
Workers' Compensation Research Institute Health Care Reform Conference
"Early Results of the Florida Pilot Project"

Phoenix, Arizona, November 15, 1993
Casualty Actuarial Society Annual Meeting
"The Use Of Managed Care in Workers' Compensation"

New York, New York, October 20, 1993
Insurance Information Institute/Reinsurance Association of America Research Conference
The Impact of Health Care Reform on Casualty Insurance"

Somerset, New Jersey, July 13, 1993
National Symposium on Workers' Compensation
"Economic Analysis of Workers' Compensation Issues"

Boston, Massachusetts, June 30, 1993
Institute of Actuaries of Japan Special Meeting
"Health Care Costs in Workers' Compensation"

Dallas, Texas, June 15, 1993
Stirling-Cooke Workers' Compensation Seminar
"Workers' Compensation Medical Costs: Trends, Causes and Solutions"

New York, New York, June 3, 1993
New York Business Group On Health
"The Crisis in Workers' Compensation Health Care"

Mauna Lani Bay, Hawaii, May 3, 1993
Western Association of Insurance Brokers Annual Meeting
"Trends in Insurance Insolvency"

Kingston, Ontario, April 28, 1993
Queen's University Workers' Compensation Conference
"Exposure Bases for Workers' Compensation: Equity vs. Practicality"

Sanibel Island, Florida, March 29, 1993
Workers' Compensation Reinsurance Bureau Annual Meeting
"The Use of Managed Care in Workers' Compensation"

Baltimore, Maryland, March 23, 1993
CAMAR Annual Meeting
"Estimating the Cost of Capital in Insurance Ratemaking"

Philadelphia, Pennsylvania, December 1, 1992
Economic Issues in Workers' Compensation Seminar,
"Rate of Return Regulation in Workers' Compensation"

Seattle, Washington, October 16, 1992
Casualty Actuarial Society Seminar on Profitability
"Risk Based Capital Standards for Property Casualty Insurers"

Washington, DC, August 18, 1992
American Risk and Insurance Association Annual Meeting
"The Crisis in Workers' Compensation"

New York, New York, May 19, 1992
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Palm Beach, Florida, April 23, 1992
NCCI Annual Meeting
"Is the Workers' Compensation Industry Competitive?"

Philadelphia, Pennsylvania, March 20, 1992
University of Pennsylvania/Duncanson & Holt Special Seminar
"Current Issues in Workers' Compensation"

Dallas, Texas, March 12, 1992
Casualty Actuarial Society Ratemaking Seminar
"Profitability Models in Insurance Ratemaking: Estimating the Parameters"

Houston, Texas, December 11, 1991
NCCI/NAIC Commissioners Symposium
"Rate Adequacy: Solvency and Safety Implications"

New York, New York, November 17, 1991
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Philadelphia, Pennsylvania, November 12, 1991
Casualty Actuarial Society Annual Meeting
"The Impact of Medical Costs on Casualty Coverages"

New York, New York, May 17, 1991
Executive Enterprises Institute Seminar: Winning Approval of Rate and Form Filings
"Determining a Fair Rate of Return for Property/Casualty Insurers"

Kiawah Island, South Carolina, April 15 & 16, 1991
Casualty Actuarial Society Seminar on Profitability
"Cost of Capital Estimation: Lessons From Public Utilities"

Chicago, Illinois, March 14, 1991
Casualty Actuarial Society Ratemaking Seminar
"The Use of Profitability Models in Insurance Ratemaking"

Orlando, Florida, October 24, 1990,
Financial Management Association Annual Meeting,
"Current Issues in Insurance Rate Regulation: California Prop. 103 and Pennsylvania Act 6"

New Brunswick, New Jersey, May 18, 1990,
Joint Conference on Workers' Compensation,
"Current State Issues and Benefit Reforms"

Orlando, Florida, May 8, 1990,
National Association of Insurance Commissioners Southeast Zone Raters Conference,
"Loss Cost Rating for Workers' Compensation"

Orlando, Florida, April 3, 1990,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"Medical Costs in Workers' Compensation: Recent Trends in Cost Containment"

Philadelphia, Pennsylvania, March 15, 1990,
CAS Ratemaking Seminar,
"Rate of Return Models in Insurance Regulation: Return on Sales vs. Return on Equity"

Chicago, Illinois, November 10, 1989,
Alliance of American Insurers Research Committee,
"Recent Developments in Rate Regulation: California Proposition 103"

New York, New York, October 5, 1989,
NCCI Legal Trends Seminar,
"Medical Cost Containment in Workers' Compensation"

Philadelphia, Pennsylvania, September 7, 1989,
Workers' Compensation Congress,
"Medical Cost Containment in Workers' Compensation"

Denver, Colorado, August 21, 1989,
American Risk and Insurance Association Annual Meeting,
"Regulatory Survival: Rate Changes in Workers' Compensation" (with Richard J. Butler)

Hilton Head, South Carolina, April 4,1989,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"Prospects for Workers' Compensation in the 1990's"

Mountain Lakes, New Jersey, March 29, 1989,
St. Clares-Riverside Medical Center,
"Stress in the Workplace"

Dallas, Texas, March 16, 1989,
Casualty Actuarial Society Ratemaking Seminar,
"The Impact of Tax Reform on Insurance Profitability"

New Orleans, Louisiana, December 15, 1988,
NAIC-NCCI Commissioners School,
"A Forecast for Workers' Compensation"

Philadelphia, Pennsylvania, November 17,1988,
Economic Issues in Workers' Compensation Seminar,
"The Impact of Regulation on the Probability of Insolvency" (with John D. Worrall and David Durbin)

Boston, Massachusetts, November 14, 1988,
American Public Health Association Annual Meeting,
"Stress in the Workplace"

Atlanta, Georgia, September 14, 1988,
Casualty Loss Reserve Seminar,
"Estimating the Cost of Social Inflation in Workers' Compensation"

Reno, Nevada, August 15, 1988,
American Risk and Insurance Association Annual Meeting,
"Benefit Increases in Workers' Compensation"

New York, New York, June 13, 1988,
National Association Of Insurance Commissioners Annual Meeting,
"Alternative Rate of Return Models for Insurance Regulation"

Syracuse, New York, May 5, 1988,
Current Issues in Workers' Compensation Symposium,
"Workers' Compensation Stress Claims"

Hilton Head, South Carolina, April 22, 1988,
Workers' Compensation Reinsurance Bureau Annual Meeting,
"A Forecast for Workers' Compensation Insurers"

Absecon, New Jersey, April 19, 1988,
Pennsylvania Coal Mine Rating Bureau Annual Meeting,
"The Use of Rate of Return Models in Insurance Rate Regulation"

Philadelphia, Pennsylvania, November 17, 1987,
Economic Issues in Workers' Compensation Seminar,
"The Transition to Permanent Disability Status" (with John D. Worrall and David Durbin)

Charlotte, North Carolina, October 20, 1987,
American Insurance Association Government Affairs Conference,
"Prospects for Workers' Compensation in 1988"

Minneapolis, Minnesota, September 29, 1987,
Minnesota Workers' Compensation Reinsurance Association Annual Meeting,
"Economic and Demographic Characteristics of Workers' Compensation Claims"

Airlie, Virginia, July 7, 1987,
National Symposium on Workers' Compensation,
"Forecasting Workers' Compensation Experience"

Santa Clara, California, June 30, 1987,
Symposium on Recent Advances in Ratemaking,
"Econometric Models of Workers' Compensation Losses"

Storrs, Connecticut, May 1, 1987,
University of Connecticut Symposium on Current Issues in Workers' Compensation,
"Current Research in Workers' Compensation"

Philadelphia, Pennsylvania, April 16, 1987,
Wharton School Graduate Seminar Series,
"Impact of Tax Reform on Workers' Compensation Profitability"

Boca Raton, Florida, December 4, 1986,
National Association of Insurance Commissioners/NCCI Commissioners School,
Panel Discussion on Current Issues in Workers' Compensation

Philadelphia, Pennsylvania, November 7, 1985,
Wharton School, University of Pennsylvania, Graduate Seminar Series,
"Litigation in Workers' Compensation"

Vancouver, British Columbia, August 19, 1985,
American Risk and Insurance Association Annual Meeting,
"Earnings Loss and Permanent Disability"

Washington, D.C., April 23, 1985,
Washington Conference on the Economics of Disability,
"Employment Effects of Workers' Compensation Insurance"

Schenectady, New York, January 18, 1985,
Union University Graduate Business Seminar Series,
"The Use of Modern Portfolio Theory in Insurance Regulation"

EXPERT TESTIMONY

Tallahassee, Florida, October 5, 2010
NCCI Workers Compensation Insurance Rate Hearing

Irvine, CA, April 21, 2010
Eastwood Insurance Services, Inc. *et. al*., vs. Titan Auto Insurance of NM, *et. al.* Deposition

San Francisco, California, March 9, 2010
Century National Insurance Company Proposition 103 Rollback Hearing

Santa Fe, New Mexico, November 18, 2009
Annual Title Insurance Rate Hearing

Tallahassee, Florida, October 29, 2009
NCCI Workers Compensation Insurance Rate Hearing

Austin, Texas, September 14, 2009
Biennial Title Insurance Rate Hearing

Austin, Texas, April 1, 2009
State Farm Lloyds Homeowners Rate Hearing

Santa Fe, New Mexico, November 19, 2008
Annual Title Insurance Rate Hearing

New York, New York, November 13, 2008
Georgia Hensley, *et. al*., vs. Computer Sciences Corp. *et. al*., Deposition

Tallahassee, Florida, October 29, 2008
State Farm Florida Homeowners Insurance Hearing

Raleigh, North Carolina, July 1, 2008
Auto Insurance Rate Hearing

San Francisco, California, May 5, 2008
GeoVera Insurance Company Earthquake Rate Hearing

Tallahassee, Florida, January 23, 2008
Hartford Insurance Group Homeowners Insurance Rate Hearing

Boston, Massachusetts, January 9, 2008
Commerce Insurance Group Auto Insurance Rate Hearing

San Francisco, California, November 29, 2007
Explorer Insurance Company Automobile Rate Hearing

Santa Fe, New Mexico, November 19, 2007
Annual Title Insurance Rate Hearing

Reno, Nevada, June 14, 2007
Public Hearing Regarding Merger Between UnitedHealth Group and Sierra Health Systems

Austin, Texas, May 31, 2007
State Farm Lloyds Homeowners Rate Hearing

Reno, Nevada, October 26, 2006
Public Hearing Regarding Demutualization of Employers Insurance Group

San Francisco, California, August 30, 2006
Hearing on Proposed Title Insurance Rate Regulations

Austin, Texas, August 14, 2006
Biennial Title Insurance Rate Hearing

Raleigh, North Carolina, September 28, 2005
Auto Insurance Rate Hearing

Providence, Rhode Island, September 27, 2005
Norcal Medical Malpractice Insurance Rate Hearing

San Francisco, California, August 23, 2005
Safeco Insurance Company Earthquake Rate Hearing

Boston, Massachusetts, April 15, 2005
Massachusetts Workers Compensation Rate Hearing

Lawrence, Massachusetts, February 14, 2005
Highground, Inc. v. Mazonson

New York, NY, January 21, 2005
NFHA v. Prudential Deposition

Austin, Texas, July 13, 2004
Medical Protective Insurance Company Medical Malpractice Insurance Rate Hearing

Austin, Texas, December 16, 2003
Biennial Title Insurance Rate Hearing

Providence, Rhode Island, November 17, 2003
Norcal Medical Malpractice Insurance Rate Hearing

San Francisco, California, September 16, 2003
Century National Proposition 103 Rollback Hearing

Austin, Texas, September 11, 2003
Farmers Insurance Exchange Homeowner Rate Rollback Hearing

Austin, Texas, September 2, 2003
State Farm Lloyds Homeowners Rate Rollback Hearing

Austin, Texas, May 21, 2003
Farmers Insurance Group Settlement Hearing

Boston, Massachusetts, April 29, 2003
Massachusetts Workers Compensation Rate Hearing

Los Angeles, California, March 12, 2003
SCPIE Medical Malpractice Rate Hearing

Raleigh, North Carolina, July 17, 2002
Auto Insurance Rate Hearing

Tallahassee, Florida, February 25, 2002
NCCI Workers Compensation Insurance Rate Hearing

Austin, Texas, February 5, 2002
Biennial Title Insurance Rate Hearing

Raleigh, North Carolina, September 24, 2001
Auto Insurance Rate Hearing

Boston, Massachusetts, August 14, 2001
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, March 6, 2001
Texas Auto Benchmark Rate Hearing

Boston, Massachusetts, August 23, 2000
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, December 7, 1999
Texas Auto Insurance Plan Association Rate Hearing

Raleigh, North Carolina, December 3, 1999
Auto Insurance Rate Hearing

Austin, Texas, November 3, 1999
Biennial Title Insurance Rate Hearing

Austin, Texas, September 8, 1999
Texas Auto Benchmark Rate Hearing

Boston, Massachusetts, August 13, 1999
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, June 22, 1999
Texas Property Benchmark Rate Hearing

Honolulu, Hawaii, December 16, 1998
NCCI Workers Compensation Insurance Rate Hearing

Richmond, Virginia, November 15, 1998
NCCI Workers Compensation Insurance Rate Hearing

Boston, Massachusetts, October 9, 1998
Massachusetts Auto Insurance Bureau Rate Hearing

Austin, Texas, May 19, 1998
Texas Auto Insurance Plan Association Rate Hearing

Austin, Texas, April 7, 1998
Auto Insurance Benchmark Rate Hearing

Austin, Texas, February 17, 1998
Property Insurance Benchmark Rate Hearing

Austin, Texas, November 18, 1997
Biennial Title Insurance Rate Hearing

Tallahassee, Florida, September 8, 1997
NCCI Workers Compensation Insurance Rate Hearing

Austin, Texas, April 8, 1997
Texas Auto Insurance Plan Association Rate Hearing

Austin, Texas, March 10, 1997
Auto Insurance Benchmark Rate Hearing

San Francisco, California, March 4, 1997
Insurance Department Hearing on Rating Factors

Raleigh, North Carolina, July 16, 1996
Auto Insurance Rate Hearing

San Francisco, California, March 11, 1996
Century National Proposition 103 Rollback Hearing

Sacramento, California, January 30, 1996
Hartford Steam Boiler Proposition 103 Rollback Hearing

San Francisco, California, January 8, 1996
SAFECO Insurance Company Earthquake Rate Hearing

Austin, Texas, December 21, 1995
Residential Property Insurance Benchmark Rate Hearing

Clearwater, Florida, December 8, 1995
Florida Windstorm Underwriting Association Rate Hearing

Austin, Texas, November 28, 1995
Private Passenger Auto Insurance Benchmark Rate Hearing

Austin, Texas, October 31, 1995
Texas Automobile Insurance Plan Association Rate Hearing

Sacramento, California, April 18, 1995
California Insurance Department Hearing on Auto Insurance Rating Factors

Portland, Maine, April 13, 1995
Workers Compensation Assigned Risk Pool Fresh Start Hearing

San Francisco, California, February 6, 1995
Farmers Insurance Group Earthquake Insurance Rate Hearing

Austin, Texas, January 6, 1995
Special Hearing on Classification Rules for Automobile Insurance

Austin, Texas, December 15, 1994
Residential Property Insurance Benchmark Rate Hearing

Austin, Texas, October 4, 1994
Texas Automobile Insurance Plan Association Rate Hearing

Austin, Texas, September 27, 1994
Private Passenger Auto Insurance Benchmark Rate Hearing

Raleigh, North Carolina, July 19, 1994
Private Passenger Auto Insurance Rate Hearing

San Francisco, California, December 22, 1993
Century National Homeowner's Insurance Rate Hearing

Raleigh, North Carolina, October 13, 1993
Homeowners/Farmowners Insurance Rate Hearing

Tallahassee, Florida, October 4, 1993
Workers' Compensation Insurance Rate Hearing

Boston, Massachusetts, September 9, 1993
Automobile Insurance Rate Hearing

Austin, Texas, March 4, 1993
Residential Property Insurance Benchmark Rate Hearing

Austin, Texas, February 10, 1993
Automobile Insurance Benchmark Rate Hearing

Honolulu, Hawaii, November 18, 1992
Liberty Mutual Insurance Automobile Rate Hearing

Raleigh, North Carolina, November 13, 1992
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, October 29, 1992
Workers' Compensation Insurance Rate Hearing

San Francisco, California, October 14, 1992
Workers' Compensation Insurance Rate Hearing

Atlanta, Georgia, September 24, 1992
Workers' Compensation Insurance Rate Hearing

Nashville, Tennessee, May 27, 1992
Workers' Compensation Insurance Rate Hearing

San Francisco, California, May 13, 1992
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, April 10, 1992
Mercury General Proposition 103 Rollback Proceedings

Austin, Texas, January 27, 1992
Texas Automobile Insurance Plan Rate Hearing

Austin, Texas, December 17, 1991
Automobile Insurance Rate Hearing

Raleigh, North Carolina, December 16, 1991
Workers' Compensation Insurance Rate Hearing

San Francisco, California, October 22, 1991
Workers' Compensation Rate Hearing

Los Angeles, California, May 23, 1991,
Proposition 103 RCD-2 Proceedings

San Francisco, California, April 9, 1991
California Workers' Compensation Rate Study Commission

Nashville, Tennessee, March 20, 1991
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, March 12, 1991,
California Workers' Compensation Rate Study Commission

Olympia, Washington, February 26, 1991,
House Financial Institutions/Insurance Committee Hearing on Rules for Insurance Regulatory Legislation

Olympia, Washington, November 27, 1990,
Insurance Department Public Hearing on Proposed Rules for Ratemaking

Harrisburg, Pennsylvania, November 12, 1990,
Allstate Insurance Company Automobile Insurance Rate Hearing

Tallahassee, Florida, November 1, 1990,
Scanlan v. Martinez, et.al., Superior Court of Leon County

San Bruno, California, October 1, 1990,
SAFECO Insurance Group Proposition 103 Rate Rollback Hearing

Austin, Texas, July 23, 1990,
Texas State Board of Insurance Special Hearing on Investment Income in Ratemaking

Harrisburg, Pennsylvania, July 18, 1990,
Pennsylvania National Mutual Insurance Company Automobile Insurance Rate Hearing

Harrisburg, Pennsylvania, June 28, 1990,
Harleysville Mutual Insurance Company Automobile Insurance Rate Hearing

Columbia, South Carolina, March 30, 1990,
Workers' Compensation Insurance Rate Hearing

San Bruno, California, March 19, 1990,
California Proposition 103 Generic Hearing

Denver, Colorado, December 12, 1989,
Workers' Compensation Insurance Rate Hearing

Tampa, Florida, October 23, 1989,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, October 17, 1989,
Workers' Compensation Insurance Rate Hearing

Los Angeles, California, September 25, 1989,
SAFECO Insurance Company of America Proposition 103 Rate Hearing

Austin, Texas, August 29, 1989,
Texas Insurance Advisory Association Property Insurance Rate Hearing

Providence, Rhode Island, April 13, 1989,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, January 24, 1989,
Workers' Compensation Insurance Rate Hearing

Hartford, Connecticut, November 14, 1988,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 3, 1988,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, November 2, 1988,
Workers' Compensation Insurance Rate Hearing

Montgomery, Alabama, June 30, 1988,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, March 24, 1988,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, October 27, 1987,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, October 9, 1987,
Workers' Compensation Insurance Rate Hearing

Atlanta, Georgia, August 6, 1987,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, February 24, 1987,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 14, 1986,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, November 18, 1986,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, May 28, 1986,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, December 6, 1985,
Workers' Compensation Insurance Rate Hearing

Oklahoma City, Oklahoma, October 10, 1985,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, July 23, 1985,
Workers' Compensation Insurance Rate Hearing

Austin Texas, June 14, 1985,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, November 18, 1984,
Workers' Compensation Insurance Rate Hearing

Austin, Texas, August 29, 1984,
Workers' Compensation Insurance Rate Hearing

Portland, Oregon, March 6, 1984,
NA IC Public Hearing on Investment Income and Insurance Profitability

Tallahassee, Florida, February 25, 1984,
Workers' Compensation Insurance Rate Hearing

Tallahassee, Florida, August 18, 1983,
Workers' Compensation Insurance Rate Hearing

Austin Texas, July 13, 1983,
Workers' Compensation Insurance Rate Hearing

Oklahoma City, Oklahoma, March 6, 1983,
Workers' Compensation Insurance Rate Hearing

Baton Rouge, Louisiana, March 16, 1982,
Louisiana Insurance Commission Public Hearing on Investment Income

Providence, Rhode Island, February 3, 1982,
Workers' Compensation Insurance Rate Hearing

Augusta, Maine, October 1, 1981,
Workers' Compensation Insurance Rate Hearing

NORTH CAROLINA RATING BUREAU
EXHIBIT RB-15, Sheet 1

Calculation of Reinsurance Cost
Statewide Total

	Total
(1) Expected Value of Net Losses	61,252,351
(2) Expected Value of Ceded Losses	36,330,164
(3) Expected Value of All Losses [(1)+(2)]	97,582,516
(4) Commission and Brokerage	12.20%
(5) Taxes Licenses and Fees	1.90%
(6) Fixed Expenses (Other Acquisition & General)	16,360,972
(7) Reinsurer Expenses plus Cost of Reinsurer Capital	99,593,041
(8) Underwriting Profit (9.5 %) and Contingencies (1.0 %)	10.50%
(9) Loss Adjustment Expense Factor	1.121
(10) Total Indicated Premium [((3) x (9) + (6) + (7)) / (1.0-(4) - (5) -(8))]	298,864,740
(11) Total Indicated Underwriting Profit [Profit from (8) x (10)]	28,392,150
(12) Investment Income on Reserves as a Percentage of Losses & LAE	4.70%
(13) Total Indicated Investment Income on Reserves [(1) x (9) x (12)]	3,228,415
(14) Total Profit excluding Investment Income on Surplus [(11) + (13)]	31,620,565
(15) Premium/Allocated Surplus Ratio	1.14
(16) Total Available Surplus [(10)/(15)]	262,747,033
(17) Available for Allocation [(14) + (16)]	294,367,598

Notes:
1. (1)-(3) From Simulation
2. (4)-(6), (8), (9) from ISO
3. (7) See Exhibit RB-14, Sheet 2
4. (12), (15) Milliman Analysis

NORTH CAROLINA RATING BUREAU
EXHIBIT RB-15, Sheet 2

Calculation of Reinsurance Cost
Statewide Total

	Total
(1) Hurricane Losses	104,436,689
(2) Loss Adjustment Expense Factor	1.121
(3) Hurricane Losses and Loss Expenses (1) x (2)	117,073,529
(4) Percent Reinsured	0.434
(5) Reinsured Losses and Loss Expenses [(3) x (4)]	50,775,936
a. Losses& LAE Included in Base Rate	40,726,114
b. Additional WSST Losses & LAE	10,049,822
(6) Reinsurance Expense Factor	0.70
(7) Reinsurance Loss+Expenses [(5) / (6)]	72,537,052
(8) Reinsurance Premium to Surplus Ratio	0.30
(9) Reinsurer Underwriting Return Percent of Surplus	14.5%
(10) Reinsurer Underwriting Return Percent of Premium[(9) / (8)]	48.3%
(11) Reinsurance Premium [(7) / (1.000-(10))]	140,319,156
(12) Reinsurance Expense Cost [(7)-(5)]	21,761,116
(13) Cost of Reinsurer Capital [(11) - (5a) -(12)]	77,831,926
(14) Reinsurer Expenses plus Cost of Reinsurer Capital [(12) + (13)]	99,593,041
(15) Direct Premium Including Reinsurance Cost	298,864,740
(16) Reinsurance Expense Cost as % of Direct Premium [(12) / (15)]	7.28%
(17) Cost of Reinsurer Capital as % of Direct Premium [(13) / (15)]	26.04%
(18) Reinsurance Premium as % of Direct Premium [(11)/ (15)]	46.95%

Notes:

(1), (5) from Simulation
(2), (15) From Sheet 1
(4) Assumes 95% hurricane losses are reinsured from 1/10 year event to 1/100 year event.
(6) Judgment based on Professional Reinsurers Cat Expenses.
(8) Milliman Analysis.
(9) Underwriting return that produces reasonable after-tax return on surplus.

NORTH CAROLINA RATING BUREAU

EXHIBIT RB-16, Sheet 1

Using Standard Deviation to Allocate Profit

	Zone 1	*Zone 2*	*Zone 3*	*Sum*
Allocation of Primary Company Amounts				
(1) Standard Deviation of Net Losses	150,425,571	25,370,151	13,828,046	189,623,767
(2) Allocation Percent [(1) / Sum(1)]	79.3%	13.4%	7.3%	100.0%
(3) Expected Profit to Allocate	25,084,100	4,230,580	2,305,885	31,620,565
(4) Expected Contingencies to Allocate (Allocated with (7))	1,880,379	525,929	582,339	2,988,647
(5) Expected Losses	38,538,392	10,778,920	11,935,039	61,252,351
(6) Loss Adjustment Expense Factor	1.121	1.121	1.121	1.121
(7) Expected Losses and Loss Expenses [(5) x (6)]	43,201,537	12,083,170	13,379,179	68,663,886
(8) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%
(9) Underwriting Profit and Contingencies [(3) + (4) - (7) x (8)]	24,933,245	4,188,387	2,259,166	31,380,798
(10) General and Other Acquisition Expense	10,293,900	2,879,132	3,187,940	16,360,972
(11) Variable Expense Percent	14.10%	14.10%	14.10%	14.10%
Allocation of Reinsurer Amounts				
(12) Standard Deviation of Ceded Losses	148,775,245	26,616,554	11,803,419	187,195,218
(13) Allocation Percent [(12) / Sum(12)]	79.5%	14.2%	6.3%	100.0%
(14) Expected Profit to Allocate	55,767,877	9,977,122	4,424,470	70,169,469
(15) Expected Ceded Loss & LAE	35,450,849	4,203,026	1,072,239	40,726,114
(16) Additional WSST Ceded Losses & LAE	8,425,183	1,346,055	278,584	10,049,822
(17) Expected Losses and Loss Expenses [(15) + (16)]	43,876,031	5,549,082	1,350,824	50,775,936
(18) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%
(19) Cost of Reinsurer Capital [(14) - (17) x (18) + (16)]	62,130,112	11,062,272	4,639,542	77,831,926
(20) Reinsurer Expenses [Total (20) allocated with (17)]	18,942,392	2,245,796	572,928	21,761,116
Summary of Expense Provisions				
(21) Indicated Premium [((7) + (9) + (10) + (15) + (19) + (20)) / (1.0 - (11))]	226,952,309	42,679,608	29,232,823	298,864,740
(22) Underwriting Profit and Contingencies (Percent) [(9) / (21)]	11.0%	9.8%	7.7%	10.5%
(23) Cost of Reinsurer Capital (Percent) [(19) / (21)]	27.4%	25.9%	15.9%	26.0%
(24) Reinsurer Expenses (Percent) [(20) / (21)]	8.3%	5.3%	2.0%	7.3%

Notes:

1. (1), (5), (12), (15), (16) From Simulation.
2. Sum(3) from Exhibit RB-15, Sheet 1, Zone amounts from Sum and Allocation Percentage (2).
3. (4), (6), (8), (10), (11), (18) From Exhibit RB-15, Sheet 1.
4. Sum(14) from Exhibit RB-15: [(Sheet 2 (13) - (5b)) + (Sheet 2 (5) x Sheet 1 (12))]
5. Zone amounts(14) from Sum(14) and Allocation Percentage (13).
6. Sum(20) from Exhibit RB-15, Sheet 2, Zone amounts from Sum and Allocation based on (17).

NORTH CAROLINA RATING BUREAU

EXHIBIT RB-16, Sheet 2

Using Variance to Allocate Profit

	Zone 1	Zone 2	Zone 3	Sum	
Allocation of Primary Company Amounts					
(1) Variance of Net Losses (in billions)	22,627,852	643,645	191,215	23,462,711	
(2) Allocation Percent [(1) / Sum(1)]	96.4%	2.7%	0.8%	100.0%	
(3) Expected Profit to Allocate	30,495,430	867,436	257,699	31,620,565	
(4) Expected Contingencies to Allocate (Allocated with (7))	1,880,379	525,929	582,339	2,988,647	
(5) Expected Losses	38,538,392	10,778,920	11,935,039	61,252,351	
(6) Loss Adjustment Expense Factor	1.121	1.121	1.121	1.121	
(7) Expected Losses and Loss Expenses [(5) x (6)]	43,201,537	12,083,170	13,379,179	68,663,886	
(8) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%	
(9) Underwriting Profit and Contingencies [(3) + (4) - (7) x (8)]	30,344,574	825,243	210,980	31,380,798	
(10) General and Other Acquisition Expense	10,293,900	2,879,132	3,187,940	16,360,972	0.238276239
(11) Variable Expense Percent	14.10%	14.10%	14.10%	14.10%	
Allocation of Reinsurer Amounts					
(12) Variance of Ceded Losses (in billions)	22,134,073	708,441	139,321	22,981,835	
(13) Allocation Percent [(12) / Sum(12)]	96.3%	3.1%	0.6%	100.0%	
(14) Expected Profit to Allocate	67,581,034	2,163,053	425,382	70,169,469	
(15) Expected Ceded Loss & LAE	35,450,849	4,203,026	1,072,239	40,726,114	
(16) Additional WSST Ceded Losses & LAE	8,425,183	1,346,055	278,584	10,049,822	
(17) Expected Losses and Loss Expenses [(15) + (16)]	43,876,031	5,549,082	1,350,824	50,775,936	
(18) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%	
(19) Cost of Reinsurer Capital [(14) - (17) x (18) + (16)]	73,943,269	3,248,203	640,454	77,831,926	
(20) Reinsurer Expenses [Total (20) allocated with (17)]	18,942,392	2,245,796	572,928	21,761,116	
Summary of Expense Provisions					
(21) Indicated Premium [((7) + (9) + (10) + (15) + (19) + (20)) / (1.0 - (11))]	247,004,098	29,667,719	22,192,923	298,864,740	
(22) Underwriting Profit and Contingencies (Percent) [(9) / (21)]	12.3%	2.8%	1.0%	10.5%	
(23) Cost of Reinsurer Capital (Percent) [(19) / (21)]	29.9%	10.9%	2.9%	26.0%	
(24) Reinsurer Expenses (Percent) [(20) / (21)]	7.7%	7.6%	2.6%	7.3%	

Notes:

1. (1), (5), (12), (15), (16) From Simulation.
2. Sum(3) from Exhibit RB-15, Sheet 1, Zone amounts from Sum and Allocation Percentage (2).
3. (4), (6), (8), (10), (11), (18) From Exhibit RB-15, Sheet 1.
4. Sum(14) from Exhibit RB-15: [(Sheet 2 (13) - (5b)) + (Sheet 2 (5) x Sheet 1 (12))]
5. Zone amounts(14) from Sum(14) and Allocation Percentage (13).
6. Sum(20) from Exhibit RB-15, Sheet 2, Zone amounts from Sum and Allocation based on (17).

NORTH CAROLINA RATING BUREAU

EXHIBIT RB-16, Sheet 3

Using Losses at Probability of Ruin to Allocate Profit

	Zone 1	*Zone 2*	*Zone 3*	*Sum*
Allocation of Primary Company Amounts				
(1) Net Losses at Probability of Ruin	320,089,846	48,006,735	20,258,922	388,355,502
(2) Allocation Percent [(1) / Sum(1)]	82.4%	12.4%	5.2%	100.0%
(3) Expected Profit to Allocate	26,062,259	3,908,790	1,649,516	31,620,565
(4) Expected Contingencies to Allocate (Allocated with (7))	1,880,379	525,929	582,339	2,988,647
(5) Expected Losses	38,538,392	10,778,920	11,935,039	61,252,351
(6) Loss Adjustment Expense Factor	1.121	1.121	1.121	1.121
(7) Expected Losses and Loss Expenses [(5) x (6)]	43,201,537	12,083,170	13,379,179	68,663,886
(8) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%
(9) Underwriting Profit and Contingencies [(3) + (4) - (7) x (8)]	25,911,404	3,866,597	1,602,797	31,380,798
(10) General and Other Acquisition Expense	10,293,900	2,879,132	3,187,940	16,360,972
(11) Variable Expense Percent	14.10%	14.10%	14.10%	14.10%
Allocation of Reinsurer Amounts				
(12) Ceded Losses at Probability of Ruin	392,162,777	55,276,633	15,856,432	463,295,842
(13) Allocation Percent [(12) / Sum(12)]	84.6%	11.9%	3.4%	100.0%
(14) Expected Profit to Allocate	59,395,857	8,372,041	2,401,570	70,169,469
(15) Expected Ceded Loss & LAE	35,450,849	4,203,026	1,072,239	40,726,114
(16) Additional WSST Ceded Losses & LAE	8,425,183	1,346,055	278,584	10,049,822
(17) Expected Losses and Loss Expenses [(15) + (16)]	43,876,031	5,549,082	1,350,824	50,775,936
(18) Expected Investment Income on Policy Reserves Percent	4.7%	4.7%	4.7%	4.7%
(19) Cost of Reinsurer Capital [(14) - (17) x (18) + (16)]	65,758,092	9,457,192	2,616,642	77,831,926
(20) Reinsurer Expenses [Total (20) allocated with (17)]	18,942,392	2,245,796	572,928	21,761,116
Summary of Expense Provisions	18,942,392	2,245,796	572,928	21,761,116
(21) Indicated Premium [((7) + (9) + (10) + (15) + (19) + (20)) / (1.0 - (11))]	232,314,521	40,436,453	26,113,766	298,864,740
(22) Underwriting Profit and Contingencies (Percent) [(9) / (21)]	11.2%	9.6%	6.1%	10.5%
(23) Cost of Reinsurer Capital (Percent) [(19) / (21)]	28.3%	23.4%	10.0%	26.0%
(24) Reinsurer Expenses (Percent) [(20) / (21)]	8.2%	5.6%	2.2%	7.3%

Notes:

1. (1), (5), (12), (15), (16) From Simulation.
2. Sum(3) from Exhibit RB-15, Sheet 1, Zone amounts from Sum and Allocation Percentage (2).
3. (4), (6), (8), (10), (11), (18) From Exhibit RB-15, Sheet 1.
4. Sum(14) from Exhibit RB-15: [(Sheet 2 (13) - (5b)) + (Sheet 2 (5) x Sheet 1 (12))]
5. Zone amounts(14) from Sum(14) and Allocation Percentage (13).
6. Sum(20) from Exhibit RB-15, Sheet 2, Zone amounts from Sum and Allocation based on (17).

NCIUA & NCJUA - North Carolina Beach Plan & Fair Plan
Residential & Commercial Accounts

Capital Available to Pay Hurricane Losses During 2010 Storm Season

	Beach Plan			Total
	Residential	Commercial	Total	Fair Plan
(1) Surplus as of 3/31/10	$605,016,126	$90,660,228	$695,676,354	$27,843,421
Projected Additions to Surplus (4/1/10 - 9/30/10):				
(2) Cash from Underwriting Operations	28,056,732	(2,851,900)	25,204,832	(2,694,091)
(3) Investment Income	8,606,791	1,240,655	9,847,447	368,388
(4) Capital Available for 2010 Hurricane Season = (1) + (2) + (3)	$641,679,649	$89,048,984	$730,728,633	$25,517,718

NCIUA & NCJUA - North Carolina Beach Plan & Fair Plan
Residential & Commercial Accounts

Catastrophe Bond Profit Multiples

Probability	# of Cat Bonds	Average Size of Issue ($ Millions)	Profit Multiple
10% to 20%	7	$27.1	2.05
5% to 10%	15	47.5	2.08
2% to 5%	42	82.9	4.38
1% to 2%	23	121.6	5.69
0.4% to 1%	20	177.1	7.97
less than 0.4%	14	59.7	15.70
Total	121	$95.5	6.11

Source: Lane Financial LLC, Annual Securitization Reviews

Notes: Based on near-term cat bonds issued between 2006 & 2010
Includes all U.S. bonds with a probability of loss between 0.05% and 20.0%; excludes bonds with no stated profit multiples
The 14 cat bonds in the "less than 0.4%" layer are from 1999 through 2010

NCIUA & NCJUA - North Carolina Beach Plan & Fair Plan
Residential & Commercial Accounts

Summary of 2010 Beach Plan & Fair Plan Reinsurance Contracts

Contract	Attachment Point ($ Millions)	Exhaustion Point ($ Millions)	Coverage	Reinstatement
Underlying Layers:				
Layer 1	$1,400.0	$1,500.0	100.0%	No
Layer 2	1,500.0	1,600.0	81.5%	No
Main Layers:				
Layer 1	1,600.0	2,100.0	85.9%	Yes
Layer 2	2,100.0	2,600.0	78.6%	Yes
Layer 3	2,600.0	3,300.0	63.0%	Yes
Layer 4	3,300.0	4,000.0	50.3%	Yes
Cat Bonds (1):				
Parkton Re	2,595.0	3,334.0	27.1%	No
Johnston Re - Static	3,300.0	4,000.0	15.0%	No
Johnston Re - Drop	3,334.0	4,000.0	30.0%	No

(1) Parkton Re is a $200 million issuance that attaches at $2.595B and exhausts at $3.334B, thus reflecting coverage of 27.06% (= 200 / [3,334-2,595]).
Johnston Re-Static is a $105 million issuance that attaches at $3.3B and exhausts at $4.0B, thus reflecting coverage of 15.0% (= 105 / [4,000-3,300]).
Johnston Re-Drop is a $200 million issuance that attaches at $3.334B and exhausts at $4.0B, thus reflecting coverage of 30.03% (= 200 / [4,000-3,334]).

NCIUA - North Carolina Beach Plan
Residential Accounts Only

Determination of the Cost of Reinsurance Provided to the NCIUA by the Voluntary Market
Reflecting HB1305: Voluntary Market Assessments Limited to $1 Billion on All Accounts Combined
($ in Millions)

	Layers of Hurricane Losses			Hurricane Losses in Layer Paid by:			
Description of Layer	Layer Attachment	Layer Exhaustion	Total Loss in Layer	Beach Plan Surplus	Private Reinsurance	Assessments on Member Companies (1)	Policyholder Surcharges
Up to 1-in-5	$0.0	$89.9	$89.9	$89.9	-	-	-
1-in-5 to 1-in-10	89.9	380.4	290.5	290.5	-	-	-
1-in-10 to 1-in-20	380.4	943.6	563.2	261.3	-	301.9	-
1-in-20 to 1-in-50	943.6	2,338.3	1,394.8	-	828.3	521.0	45.5
1-in-50 to 1-in-100	2,338.3	3,939.0	1,600.7	-	1,039.8	45.9	515.0
1-in-100 to 1-in-250	3,939.0	6,911.9	2,972.9	-	110.8	-	2,862.1
Above 1-in-250	6,911.9	Unlimited	Unlimited	-	Minimal	-	Unlimited
TOTAL				$641.7	$1,978.8	$868.8	Unlimited

(1) Total losses paid by Member Companies ($868.8 M) reflects the Residential portion of the $1 Billion Beach Plan assessment on the total Voluntary Market

NCIUA - North Carolina Beach Plan
Residential Accounts Only

Determination of the Cost of Reinsurance Provided to the NCIUA by the Voluntary Market
Reflecting HB1305: Voluntary Market Assessments Limited to $1 Billion on All Accounts Combined
($ in Millions)

Description of Layer	Total Hurricane Losses in Layer	Assessments Paid by Member Companies (1)	Expected Losses (2) Total	Expected Losses (2) Exposed (3)	Indicated Profit Multiple (from Cat Bonds)	Cost of Providing Reinsurance (4)
Up to 1-in-5	$89.9	-	$23.25	$0.00	0.00	$0.00
1-in-5 to 1-in-10	290.5	-	39.91	0.00	2.05	0.00
1-in-10 to 1-in-20	563.2	301.9	38.78	17.09	2.08	35.58
1-in-20 to 1-in-50	1,394.8	521.0	43.60	16.29	4.38	71.40
1-in-50 to 1-in-100	1,600.7	45.9	23.02	2.07	5.69	11.76
1-in-100 to 1-in-250	2,972.9	-	19.43	0.00	7.97	0.00
Above 1-in-250	Unlimited	-	14.97	0.00	15.70	0.00
TOTAL		$868.8	$202.98	$35.44		$118.74

(1) See Exhibit RB17, Page 4
(2) From AIR model
(3) Expected loss subject to Beach Plan assessments of Voluntary Market
(4) = Exposed Expected Losses x Cat Bond Profit Multiple

NCJUA - North Carolina Fair Plan
Residential & Commercial Accounts

Determination of the Cost of Reinsurance Provided to the NCJUA by the Voluntary Market
Reflecting Unlimited Industry Exposure above Fair Plan
($ in Millions)

	Layers of Hurricane Losses			Hurricane Losses in Layer Paid by:		
Description of Layer	Layer Attachment	Layer Exhaustion	Total Loss in Layer	Fair Plan Surplus	Private Reinsurance	Assessments on Member Companies
Up to 1-in-5	$0.0	$5.4	$5.4	$5.4	-	-
1-in-5 to 1-in-10	5.4	23.0	17.6	16.2	-	1.4
1-in-10 to 1-in-20	23.0	57.1	34.1	3.7	-	30.3
1-in-20 to 1-in-50	57.1	141.5	84.4	0.1	50.1	34.2
1-in-50 to 1-in-100	141.5	238.3	96.8	0.0	62.9	33.9
1-in-100 to 1-in-250	238.3	418.2	179.9	0.0	6.7	173.1
Above 1-in-250	418.2	Unlimited	Unlimited	-	Minimal	Unlimited
TOTAL				$25.5	$119.7	Unlimited

NCJUA - North Carolina Fair Plan
Residential & Commercial Accounts

Determination of the Cost of Reinsurance Provided to the NCJUA by the Voluntary Market

Reflecting Unlimited Industry Exposure above Fair Plan

($ in Millions)

Description of Layer	Total Hurricane Losses in Layer	Assessments Paid by Member Companies (1)	Expected Losses (2) Total	Expected Losses (2) Exposed (3)	Indicated Profit Multiple (from Cat Bonds)	Cost of Providing Reinsurance (4)
Up to 1-in-5	$5.4	-	$1.45	$0.00	0.00	$0.00
1-in-5 to 1-in-10	17.6	1.4	2.49	0.20	2.05	0.41
1-in-10 to 1-in-20	34.1	30.3	2.41	2.11	2.08	4.40
1-in-20 to 1-in-50	84.4	34.2	2.66	1.10	4.38	4.82
1-in-50 to 1-in-100	96.8	33.9	1.35	0.48	5.69	2.70
1-in-100 to 1-in-250	179.9	173.1	1.10	1.05	7.97	8.40
Above 1-in-250	Unlimited	Unlimited	0.83	0.83	15.70	12.96
TOTAL		Unlimited	$12.28	$5.77		$\boxed{\$33.69}$

(1) See Exhibit RB17, Page 6

(2) From AIR model

(3) Expected loss subject to Fair Plan assessments of Voluntary Market

(4) = Exposed Expected Losses x Cat Bond Profit Multiple

NCIUA & NCJUA - North Carolina Beach Plan & Fair Plan
Residential Accounts Only

Determination of the Compensation for Bearing the Risk of Beach Plan & Fair Plan Assessments
($ in Millions)

(1) Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCIUA (Beach Plan):	$118.74
(2) Cost of Reinsurance Provided by the Voluntary Market to the NCJUA (Fair Plan):	$33.69
(3) Residential Premium as % of Total Fair Plan Assessment Base:	70%
(4) Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCJUA (Fair Plan):	$23.58
(5) Total Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCIUA & NCJUA:	$142.32

Policy Form	(6) Estimated 2010 Industry Written Premium @ Manual Rates	(7) = (6) / Total (6) % of Total Industry Premium	(8) = (5) x (7) Allocated Compensation for Risk of Assessment	(9) = (8) / (6) Compensation for Assessment Risk as % of 2010 Manual Premium
Homeowners	$2,228.6	82.6%	$117.53	5.3%
Dwelling Fire & EC	335.8	12.4%	17.71	5.3%
MobileHome	134.4	5.0%	7.09	5.3%
Total	$2,698.8	100.0%	$142.32	5.3%

(1) From Exhibit RB17, Page 5
(2) From Exhibit RB17, Page 7
(4) = (2) x (3)
(5) = (1) + (4)
(6) 2010 Industry Premium includes NCIUA and NCJUA

NCRB - PRO FORMA STATUTORY RETURN

DWELLING FIRE

		Pre-Tax	Tax Liability	Post-Tax
1.	Premiums	100.00%		
	Loss & Loss Adjustment Expense	57.37%		
	Commission & Brokerage	15.00%		
	General Expense	7.87%		
	Other Acquisition Expense	7.36%		
	Taxes, Licenses and Fees	2.90%		
2.	Pro-Forma Underwriting Profit	9.50%		
3.	Installment Fee Income	0.71%		
4.	Regular tax		3.57%	
5.	Additional tax due to TRA		0.26%	
6.	Return from Underwriting (post-tax)			6.38%
7.	Investment Gain on Insurance Transaction	2.62%		
	Less Investment Income on Agents Balances	0.52%		
	Net Investment Gain on Insurance Transaction	2.10%	0.49%	1.61%
8.	Statutory Return as a % of Premium (post-tax)			7.99%
9.	Premium-to-Net Worth Ratio			0.974
10.	Statutory Return as a % of Net Worth (post-tax)			7.78%

Note: Lines (1) to (8) are all expressed as a % of premium.

Assumptions

(a)	UW Tax Rate =	35.00%
(b)	Inv. Income Tax Rate =	23.41%
(c)	Inv. Yield =	3.96%
(d)	P/S Ratio =	1.13
(e)	NW/S Ratio =	1.16
(f)	Installment Fee Income=	0.71%
(g)	Additional TRA tax=	0.26%

NOTES TO EXHIBIT RB-18, Page 1

1. The expense provisions are those used on page C-1 of Exhibit RB-1.

2. Selected by Rate Bureau.

3. See assumption (f) below.

4. [(2)+(3)] x (a).

5. See assumption (g) below.

6. (2) + (3) - [(4) + (5)].

7. Pages 7-10. Investment income on agents' balances equals 0.131 x 1.032 x (c), where 0.131 is agents' balances for premiums due less than 90 days and 1.032 is the factor to include the effects of agents' balances or uncollected premiums overdue for more than 90 days.

8. (6) + (7).

9. (d)/(e).

10. (8) x (9).

ASSUMPTIONS

(a) Internal Revenue Code.

(b) See RB-18, pp. 11-13; 1-avg post-tax yield/avg pre-tax yield.

(c) See RB-18, pp. 11-13; average of current and embedded yields.

(d) See RB-18, p. 14

(e) See RB-18, p. 15.

(f) See RB-18, p. 3.

(g) See RB-18, pp. 4-6

NCRB - PRO FORMA STATUTORY RETURN
ADJUSTED TO INCLUDE INVESTMENT INCOME ON SURPLUS
DWELLING FIRE

	Pre-Tax	Tax Liability	Post-Tax
1. Premiums	100.00%		
Loss & Loss Adjustment Expense	57.37%		
Commission & Brokerage	15.00%		
General Expense	7.87%		
Other Acquisition Expense	7.36%		
Taxes, Licenses and Fees	2.90%		
2. Pro-Forma Underwriting Profit	9.50%		
3. Installment Fee Income	0.71%		
4. Regular tax		3.57%	
5. Additional tax due to TRA		0.26%	
6. Return from Underwriting (post-tax)			6.38%
7. Investment Gain on Insurance Transaction	2.62%		
Less Investment Income on Agents Balances	0.52%		
Net Investment Gain on Insurance Transaction	2.10%	0.49%	1.61%
8. Investment Gain on Surplus (Including Prepaid Expense Adjustment)	3.94%	0.92%	3.02%
9. Total Return as a % of Premium (post-tax)			11.00%
10. Premium-to-Net Worth Ratio			0.974
11. Total Return as a % of Net Worth (post-tax)			10.72%

Note: Lines (1) to (9) are all expressed as a % of premium.

Assumptions

(a) UW Tax Rate =	35.00%
(b) Inv. Income Tax Rate =	23.41%
(c) Inv. Yield =	3.96%
(d) P/S Ratio =	1.13
(e) NW/S Ratio =	1.16
(f) Installment Fee Income=	0.71%
(g) Additional TRA tax=	0.26%

NOTES TO EXHIBIT RB-18, Page 1A

1. The expense provisions are those used on page C-1 of Exhibit RB-1.

2. Selected by Rate Bureau.

3. See assumption (f) below.

4. [(2)+(3)] x (a).

5. See assumption (g) below.

6. (2) + (3) - [(4) + (5)].

7. Pages 7-10. Investment income on agents' balances equals 0.131 x 1.032 x (c), where 0.131 is agents' balances for premiums due less than 90 days and 1.032 is the factor to include the effects of agents' balances or uncollected premiums overdue for more than 90 days.

8. (c) x [1/(d) + (0.2503 x 0.4373)], where 0.2503 is the prepaid expense ratio from page 7 and 0.4373 is the unearned premium reserve to premium ratio from page 7.

9. (6) + (7) + (8).

10. (d) / (e).

11. (9) x (10).

ASSUMPTIONS

(a) Internal Revenue Code.

(b) See RB-18, pp. 11-13; 1-avg post-tax yield/avg pre-tax yield.

(c) See RB-18, pp. 11-13; average of current and embedded yields.

(d) See RB-18, p. 14

(e) See RB-18, p. 15.

(f) See RB-18, p. 3.

(g) See RB-18, pp. 4-6

NORTH CAROLINA
DWELLING FIRE/EC INSTALLMENT PAYMENT INCOME
(in thousands)

Year	Inst. Charges as a % of Prem.
2007	0.86%
2006	0.68%
2005	0.65%
2004	0.68%
2003	0.70%
Average	0.71%
Selected Value	0.71%

Source: From ISO.

NORTH CAROLINA
DWELLING FIRE

ESTIMATION OF TRA TAXABLE INCOME

1	Earned Premium (current year)	100.00%
2	UEPR (previous year)	40.51%
3	UEPR (current year)	44.03%
4	Increase = (3)-(2)	3.51%
5	20% of Increase = Taxable Income	0.70%
6	Tax Liability = (5)x.35	0.25%
7	Unpaid Losses (current year)	8.19%
8	Discounted unpaid losses (current year)	7.92%
9	Unpaid Losses (previous year)	7.53%
10	Discounted unpaid losses (previous year)	7.28%
11	Additional Income	0.02%
12	Tax Liability	0.01%
	Other Tax Liabilities	
13	UEP	0.25%
14	Discounting of Loss Reserves	0.01%
15	Total	0.26%

NORTH CAROLINA
DWELLING FIRE
CALCULATION OF TAXABLE INCOME

(1) AY Avg Acc Date	(2) AY Pay Pattern	(3) Percent Unpaid	(4) Total Losses	(5) Unpaid Losses
0.5	88.40%	11.60%	57.368	6.7
1.5	97.90%	2.10%	52.789	1.1
2.5	99.40%	0.60%	48.575	0.3
3.5	99.80%	0.20%	44.698	0.1
4.5	99.90%	0.10%	41.130	0.0
5.5	100.00%	0.00%	37.847	0.0
6.5	100.00%	0.00%	34.826	0.0
7.5	100.00%	0.00%	32.047	0.0
8.5	100.00%	0.00%	29.489	0.0
9.5	100.00%	0.00%	27.135	0.0
10.5	100.00%	0.00%	24.969	0.0
11.5	100.00%	0.00%	22.976	0.0
12.5	100.00%	0.00%	21.142	0.0
13.5	100.00%	0.00%	19.455	0.0
14.5	100.00%	0.00%	17.902	0.0
15.5	100.00%	0.00%	16.473	0.0
16.5	100.00%	0.00%	15.158	0.0
17.5	100.00%	0.00%	13.948	0.0
18.5	100.00%	0.00%	12.835	0.0
19.5	100.00%	0.00%	11.811	0.0
20.5	100.00%	0.00%	10.868	0.0
21.5	100.00%	0.00%	10.000	0.0
22.5	100.00%	0.00%	9.202	0.0
23.5	100.00%	0.00%	8.468	0.0
24.5	100.00%	0.00%	7.792	0.0
25.5	100.00%	0.00%	7.170	0.0
26.5	100.00%	0.00%	6.598	0.0
27.5	100.00%	0.00%	6.071	0.0
28.5	100.00%	0.00%	5.586	0.0
29.5	100.00%	0.00%	5.141	0.0
30.5	100.00%	0.00%	4.730	0.0
31.5	100.00%	0.00%	4.353	0.0
32.5	100.00%	0.00%	4.005	0.0
33.5	100.00%	0.00%	3.686	0.0
34.5	100.00%	0.00%	3.391	0.0
35.5	100.00%	0.00%	3.121	0.0
36.5	100.00%	0.00%	2.872	0.0
37.5	100.00%	0.00%	2.642	0.0
38.5	100.00%	0.00%	2.431	0.0
39.5	100.00%	0.00%	2.237	0.0
40.5	100.00%	0.00%	2.059	0.0
41.5	100.00%	0.00%	1.894	0.0
42.5	100.00%	0.00%	1.743	0.0
43.5	100.00%	0.00%	1.604	0.0
44.5	100.00%	0.00%	1.476	0.0
45.5	100.00%	0.00%	1.358	0.0
46.5	100.00%	0.00%	1.250	0.0
47.5	100.00%	0.00%	1.150	0.0
48.5	100.00%	0.00%	1.058	0.0
49.5	100.00%	0.00%	0.974	0.0
50.5	100.00%	0.00%	0.896	0.0
51.5	100.00%	0.00%	0.825	0.0
52.5	100.00%	0.00%	0.759	0.0
53.5	100.00%	0.00%	0.698	0.0
54.5	100.00%	0.00%	0.642	0.0
55.5	100.00%	0.00%	0.591	0.0
56.5	100.00%	0.00%	0.544	0.0
57.5	100.00%	0.00%	0.501	0.0
58.5	100.00%	0.00%	0.461	0.0
59.5	100.00%	0.00%	0.424	0.0
60.5	100.00%	0.00%	0.390	0.0
61.5	100.00%	0.00%	0.359	0.0
62.5	100.00%	0.00%	0.330	0.0
63.5	100.00%	0.00%	0.304	0.0
64.5	100.00%	0.00%	0.280	0.0
65.5	100.00%	0.00%	0.257	0.0
66.5	100.00%		0.237	0.0
Sum				8.19

(6) AY at current year end	(7) Discount Factor	(8) Discounted Weight
2009	0.966430	6.4
2008	0.966174	1.1
2007	0.980298	0.3
2006	0.980298	0.1
2005	0.980298	0.0
2004	0.980298	0.0
2003	0.980298	0.0
2002	0.980298	0.0
2001	0.980298	0.0
2000	0.980298	0.0
1999	0.980298	0.0
1998	0.980298	0.0
1997	0.980298	0.0
1996	0.980298	0.0
1995	0.980298	0.0
1994	0.980298	0.0
1993	0.980298	0.0
1992	0.980298	0.0
1991	0.980298	0.0
1990	0.980298	0.0
1989	0.980298	0.0
1988	0.980298	0.0
1987	0.980298	0.0
1986	0.980298	0.0
1985	0.980298	0.0
1984	0.980298	0.0
1983	0.980298	0.0
1982	0.980298	0.0
1981	0.980298	0.0
1980	0.980298	0.0
1979	0.980298	0.0
1978	0.980298	0.0
1977	0.980298	0.0
1976	0.980298	0.0
1975	0.980298	0.0
1974	0.980298	0.0
1973	0.980298	0.0
1972	0.980298	0.0
1971	0.980298	0.0
1970	0.980298	0.0
1969	0.980298	0.0
1968	0.980298	0.0
1967	0.980298	0.0
1966	0.980298	0.0
1965	0.980298	0.0
1964	0.980298	0.0
1963	0.980298	0.0
1962	0.980298	0.0
1961	0.980298	0.0
1960	0.980298	0.0
1959	0.980298	0.0
1958	0.980298	0.0
1957	0.980298	0.0
1956	0.980298	0.0
1955	0.980298	0.0
1954	0.980298	0.0
1953	0.980298	0.0
1952	0.980298	0.0
1951	0.980298	0.0
1950	0.980298	0.0
1949	0.980298	0.0
1948	0.980298	0.0
1947	0.980298	0.0
1946	0.980298	0.0
1945	0.980298	0.0
1944	0.980298	0.0
1943	0.980298	0.0
Sum		7.92

(9) AY at prior year end	(10) Weight	(11) Discount Factor	(12) Discounted Weight
2008	6.1234847	0.966430	5.9
2007	1.0200788	0.966174	1.0
2006	0.2681881	0.980298	0.3
2005	0.0822606	0.980298	0.1
2004	0.0378474	0.980298	0.0
2003	0	0.980298	0.0
2002	0	0.980298	0.0
2001	0	0.980298	0.0
2000	0	0.980298	0.0
1999	0	0.980298	0.0
1998	0	0.980298	0.0
1997	0	0.980298	0.0
1996	0	0.980298	0.0
1995	0	0.980298	0.0
1994	0	0.980298	0.0
1993	0	0.980298	0.0
1992	0	0.980298	0.0
1991	0	0.980298	0.0
1990	0	0.980298	0.0
1989	0	0.980298	0.0
1988	0	0.980298	0.0
1987	0	0.980298	0.0
1986	0	0.980298	0.0
1985	0	0.980298	0.0
1984	0	0.980298	0.0
1983	0	0.980298	0.0
1982	0	0.980298	0.0
1981	0	0.980298	0.0
1980	0	0.980298	0.0
1979	0	0.980298	0.0
1978	0	0.980298	0.0
1977	0	0.980298	0.0
1976	0	0.980298	0.0
1975	0	0.980298	0.0
1974	0	0.980298	0.0
1973	0	0.980298	0.0
1972	0	0.980298	0.0
1971	0	0.980298	0.0
1970	0	0.980298	0.0
1969	0	0.980298	0.0
1968	0	0.980298	0.0
1967	0	0.980298	0.0
1966	0	0.980298	0.0
1965	0	0.980298	0.0
1964	0	0.980298	0.0
1963	0	0.980298	0.0
1962	0	0.980298	0.0
1961	0	0.980298	0.0
1960	0	0.980298	0.0
1959	0	0.980298	0.0
1958	0	0.980298	0.0
1957	0	0.980298	0.0
1956	0	0.980298	0.0
1955	0	0.980298	0.0
1954	0	0.980298	0.0
1953	0	0.980298	0.0
1952	0	0.980298	0.0
1951	0	0.980298	0.0
1950	0	0.980298	0.0
1949	0	0.980298	0.0
1948	0	0.980298	0.0
1947	0	0.980298	0.0
1946	0	0.980298	0.0
1945	0	0.980298	0.0
1944	0	0.980298	0.0
1943	0	0.980298	0.0
Sum			7.28

NOTES TO PAGES 4 AND 5

Page 4

1 Current year earned premium

2 Estimated prior year UEPR as percent of current year earned premium given assumed premium growth rate

3 Annual Statement, page 15, UEPR/Earned Premium for all companies writing this line of insurance in North Carolina.

4 Line (3) - line (2)

5 Line (4) x .20.

6 Line (5) x .35.

7 Unpaid current-year losses at year-end as a percent of premium. Sum of Page 5, Column (5).

8 Discounted unpaid current-year losses at year-end as a percent of premium. Sum of Page 5, Column (8).

9 Unpaid prior-year losses at year-end as a percent of premium. Sum of Page 5, Column (5) divided by (1+ assumed growth rate).

10 Discounted unpaid prior-year losses at year-end as a percent of premium. Sum of Page 5, Column (12).

11 Line (7) - Line (8) - [Line (9) - Line (10)]

12 Line (11) x .35

13 Line (6)

14 Line (12)

15 Line (13) + Line (14)

Page 5

1 Midpoint of number of years since end of accident period.

2 Accident year payout pattern developed from policy year developed losses.

3 1 - Column (2)

4 Losses, given assumed historical growth rate.

5 Column (3) x Column (4)

6 Accident Year at current year end

7 Discount factor per IRS Regulations.

8 Column (5) x Column (7)

9 Accident Year at prior year end

10 Column (3), previous period x Column (4), current period

11 Discount factor per IRS Regulations.

12 Column (10) x Column (11)

NCRB INVESTMENT INCOME CALCULATION
DWELLING FIRE
Projected Investment Earnings on Loss, Loss
Adjustment Expense and Unearned Premium Reserves

A. UNEARNED PREMIUM RESERVES		
1. Direct Earned Premiums		1,000,000
2. Mean UEPR	43.73%	437,300
3. Deductions for prepaid expenses		
Commissions & Brokerage	15.00%	
Taxes, Licenses & Fees	2.42%	
One Half Other Acquisition Expense	3.68%	
One Half General Expense	3.93%	
Total	25.03%	
4. Deduction for Prepaid Expenses: (2) x (3)		109,467
5. Net UEPR Subject to Inv (4) - (2)		327,833
B. Loss and Loss Expense Reserves		
1. Direct Earned Premium		1,000,000
2. Expected Inc L & LAE to Premium Ratio	0.5737	573,676
3. Expected Mean L&LAE Reserve to Inc. L & LAE Ratio	0.581	333,086
C. Net PH Funds Subj to Inv (A5 + B3)		660,919
D. Average Rate of Return		3.96%
E. Investment Earnings from Net Reserves (D) x (E)		26,172
F. Average Rate of Return as a Percent of Direct Earned Premium (E) / (A1)		2.62%

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

All calculations are displayed per $1,000,000 direct earned premiums.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/current year for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

1. Collected Earned Premium for Calendar Year ended 12/31/current year	171,488,046
2. Unearned Premium Reserve as of 12/31/prior year	74,473,320
3. Unearned Premium Reserve as of 12/31/current year	75,504,872
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	74,989,096
5. Ratio (4) ÷ (1)	0.4373

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/current year.

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line B-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/current year.

Line B-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

1	Incurred Losses for CY	2003	47,926,168
2	Incurred Losses for CY	2004	50,136,613
3	Incurred Losses for CY	2005	57,292,735
4	Incurred Losses for CY	2006	74,371,507
5	Incurred Losses for CY	2007	99,526,487
6	Loss Reserves as of 12/31	2002	30,860,422
7	Loss Reserves as of 12/31	2003	33,193,930
8	Loss Reserves as of 12/31	2004	28,560,379
9	Loss Reserves as of 12/31	2005	30,521,170
10	Loss Reserves as of 12/31	2006	45,299,619
11	Loss Reserves as of 12/31	2007	37,233,970
12	Mean Loss Reserve	2003	32,027,176
13	Mean Loss Reserve	2004	30,877,155
14	Mean Loss Reserve	2005	29,540,775
15	Mean Loss Reserve	2006	37,910,395
16	Mean Loss Reserve	2007	41,266,795
17	Loss Reserve Ratio	2003	0.668
18	Loss Reserve Ratio	2004	0.616
19	Loss Reserve Ratio	2005	0.516
20	Loss Reserve Ratio	2006	0.510
21	Loss Reserve Ratio	2007	0.415
22	Average Loss Reserve Ratio		0.545
23	Ratio of LAE Reserves to Loss Reserves		0.236
24	Ratio of Incurred LAE to Incurred Losses		0.160
25	Loss and LAE Reserve/Incurred Loss&LAE		0.581

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

<u>Line E</u>

The average rate of return is calculated as the arithmetic mean of the embedded and current yields. The embedded yield is the sum of two ratios: the most recent ratio of investment income to invested assets, plus the ten year average ratio of capital gains to invested assets (see page 12). The current yield is the estimated, currently available rate of return (including income and expected capital gains) on the property/casualty industry investment portfolio (see page 11).

Embedded Yield =	4.17% + 0.58% =	4.75%
Current Yield =		3.18%
Average =		3.96%

PORTFOLIO YIELD AND TAX RATE - CURRENT YIELD

(1) Investable Asset	(2) Percent of Assets	(3) Estimated Prospective Pre-Tax Return	(4) Tax Rate	(5) Estimated Prospective Post-Tax Return
Bonds				
U.S. Govt	9.47%	2.18%	35.00%	1.42%
States & territories	14.48%	2.59%	5.25%	2.45%
Special revenue	25.58%	2.81%	5.25%	2.66%
Public Utilities	1.38%	2.93%	35.00%	1.90%
Industrial	22.09%	2.68%	35.00%	1.74%
Preferred stock	1.84%	5.81%	14.18%	4.99%
Common stock	15.07%	9.60%	30.39%	6.68%
Mortgage Loans	0.42%	5.02%	35.00%	3.26%
Real estate	0.92%	4.08%	35.00%	2.65%
Cash & short-term invs.	8.74%	0.14%	35.00%	0.09%
Rate of Return Pre-Inv Exp	100.00%	3.56%	23.35%	2.73%
Investment Expenses		0.38%	35.00%	0.25%
Portfolio Rate of Return		**3.18%**	21.96%	**2.48%**

Sources:

Various issues of Federal Reserve Statistical Release, H.15(519).
Mergent Bond Record.
Standard & Poor's CreditWeek.
Value Line Investment Survey, Part II.
Ibbotson Associates, "SBBI Valuation Edition 2010 Yearbook."
Ibbotson and Siegel, AREUEA Journal, 1984.
A.M. Best's Aggregates & Averages, 2009 edition.

PORTFOLIO YIELD AND TAX RATE EMBEDDED YIELD	Income	Tax Rate
Bonds		
Taxable	26,065,645	35.00%
Non-Taxable	16,923,546	5.25%
Stocks		
Taxable	5,244,126	14.18%
Non-Taxable	1,234,199	5.25%
Mortgage Loans	312,607	35.00%
Real Estate	1,772,757	35.00%
Contract Loans	692	35.00%
Cash / Short Term Inv.	2,660,197	35.00%
All Other	4,262,121	35.00%
Total	58,475,890	23.89%
Inv. Expenses	4,710,400	35.00%
Net Inv. Income	53,765,490	22.92%
Mean Invested Assets	1,288,393,875	
Inv. Inc. Yield Rate	4.17%	22.92%
Capital Gains (10 yr. avg) (% Of Inv. Assets)	0.58%	35.00%
Invest. Yield Rate (pre-tax)	**4.75%**	**24.38%**
Invest. Yield Rate (post-tax)	**3.59%**	

Source: Best's Aggregates and Averages, 2009 Edition, p. 12 (Exhibit of Net Investment Income, Col. 2 (Earned During Year)).
Capital Gains: RB-18, page 13

CAPITAL GAINS OR LOSSES
AS A PERCENT OF MEAN ASSETS
(All amounts in thousands of dollars)

Calendar Year	Mean Total Invested Assets	Realized Capital Gains	
		Amount	Percent
1999	797,920,622	13,016,157	1.63%
2000	794,195,460	16,204,649	2.04%
2001	785,530,275	6,630,679	0.84%
2002	815,037,267	2,770,997	0.34%
2003	908,024,056	6,280,196	0.69%
2004	1,018,810,319	9,113,199	0.89%
2005	1,120,112,663	12,194,908	1.09%
2006	1,217,432,187	3,587,228	0.29%
2007	1,297,478,130	9,031,778	0.70%
2008	1,288,393,875	(21,018,623)	-1.63%
Total	10,042,934,851	57,811,168	0.58%

*Mean total invested assets is the average of the current year and prior year values of total invested assets (annual statement page 2, Line 9).

Source: "Best's Aggregates & Averages--Property-Casualty," various editions

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE

PREMIUM-TO-SURPLUS RATIOS

Year	Fire	Extended Coverage
1999	1.054	1.013
2000	1.047	1.095
2001	1.153	1.198
2002	1.302	1.330
2003	1.271	1.244
2004	1.297	1.288
2005	1.225	1.196
2006	1.001	1.010
2007	0.948	0.967
2008	1.003	1.034
Five-Year Average	1.095	1.099
Ten-Year Average	1.130	1.137

Notes:

1 Ratios based on net premium written.
2 From Best's Data Service and Best's Aggregate and Averages.
3 Top 30 groups each year.

NORTH CAROLINA DWELLING FIRE/EC INSURANCE
CALCULATION OF GAAP NET WORTH TO SURPLUS RATIO

	2004	2005	2006	2007	2008
Policyholder Surplus	391,294,425,276	425,759,944,800	486,231,429,443	517,875,621,253	457,293,555,877
+ Deferred Acquisition Costs	25,336,389,277	26,322,460,773	27,351,959,298	27,556,696,928	27,267,204,493
+ Non-Admitted DTA Provision	19,919,892,745	20,389,557,802	19,710,944,304	20,970,760,003	34,146,635,006
+ Non-admitted Assets (non-tax part)	22,629,830,486	23,050,311,315	25,215,840,687	28,591,349,752	28,634,028,619
+ Provision for Reinsurance	5,971,612,606	5,757,810,700	5,407,923,691	4,619,150,713	4,002,703,029
+ Provision for FASB 115(after-tax)	13,697,026,260	4,664,626,701	4,267,041,184	6,555,479,760	(14,840,617,729)
- Surplus Notes	(10,569,400,392)	(11,102,999,699)	(10,633,190,656)	(10,147,724,269)	(12,270,695,235)
GAAP-adjusted Net Worth	468,279,776,257	494,841,712,392	557,551,947,951	596,021,334,139	524,232,814,060
Ratio of GAAP Net Worth to Statutory Surplus	1.20	1.16	1.15	1.15	1.15
Five Year Average	1.16				

Source: ISO

NCRB - PRO FORMA STATUTORY RETURN

DWELLING EXTENDED COVERAGE

		Pre-Tax	Tax Liability	Post-Tax
1.	Premiums	100.00%		
	Loss & Loss Adjustment Expense	37.60%		
	Commission & Brokerage	12.20%		
	General Expense	2.82%		
	Other Acquisition Expense	2.66%		
	Taxes, Licenses and Fees	1.90%		
	Net Cost of Reinsurance	33.32%		
2.	Pro-Forma Underwriting Profit	9.50%		
3.	Installment Fee Income	0.71%		
4.	Regular tax		3.57%	
5.	Additional tax due to TRA		0.33%	
6.	Return from Underwriting (post-tax)			6.31%
7.	Investment Gain on Insurance Transaction	1.75%		
	Less Investment Income on Agents Balances	0.52%		
	Net Investment Gain on Insurance Transaction	1.24%	0.29%	0.95%
8.	Statutory Return as a % of Premium (post-tax)			7.26%
9.	Premium-to-Net Worth Ratio			0.980
10.	Statutory Return as a % of Net Worth (post-tax)			7.11%

Note: Lines (1) to (8) are all expressed as a % of premium.

Assumptions

(a) UW Tax Rate =	35.00%
(b) Inv. Income Tax Rate =	23.41%
(c) Inv. Yield =	3.96%
(d) P/S Ratio =	1.14
(e) NW/S Ratio =	1.16
(f) Installment Fee Income=	0.71%
(g) Additional TRA tax=	0.33%
(h) Net Cost of Reinsurance	33.32%

NOTES TO EXHIBIT RB-19, Page 1

1. The expense provisions are those used on page C-3 of Exhibit RB-1.

2. Selected by Rate Bureau.

3. See assumption (f) below.

4. [(2)+(3)] x (a).

5. See assumption (g) below.

6. (2) + (3) - [(4) + (5)].

7. Pages 7-10. Investment income on agents' balances equals 0.131 x 1.032 x (c), where 0.131 is agents' balances for premiums due less than 90 days and 1.032 is the factor to include the effects of agents' balances or uncollected premiums overdue for more than 90 days.

8. (6) + (7).

9. (d)/(e).

10. (8) x (9).

ASSUMPTIONS

(a) Internal Revenue Code.

(b) See RB-19, pp. 11-13; 1-avg post-tax yield/avg pre-tax yield.

(c) See RB-19, pp. 11-13; average of current and embedded yields.

(d) See RB-19, p. 14

(e) See RB-19, p. 15.

(f) See RB-19, p. 3.

(g) See RB-19, pp. 4-6

(h) See prefiled testimony.

NCRB - PRO FORMA STATUTORY RETURN
ADJUSTED TO INCLUDE INVESTMENT INCOME ON SURPLUS
DWELLING EXTENDED COVERAGE

	Pre-Tax	Tax Liability	Post-Tax
1. Premiums	100.00%		
Loss & Loss Adjustment Expense	37.60%		
Commission & Brokerage	12.20%		
General Expense	2.82%		
Other Acquisition Expense	2.66%		
Taxes, Licenses and Fees	1.90%		
Net Cost of Reinsurance	33.32%		
2. Pro-Forma Underwriting Profit	9.50%		
3. Installment Fee Income	0.71%		
4. Regular tax		3.57%	
5. Additional tax due to TRA		0.33%	
6. Return from Underwriting (post-tax)			6.31%
7. Investment Gain on Insurance Transaction	1.75%		
Less Investment Income on Agents Balances	0.52%		
Net Investment Gain on Insurance Transaction	1.24%	0.29%	0.95%
8. Investment Gain on Surplus (Including Prepaid Expense Adjustment)	4.58%	1.07%	3.51%
9. Total Return as a % of Premium (post-tax)			10.76%
10. Premium-to-Net Worth Ratio			0.980
11. Total Return as a % of Net Worth (post-tax)			10.55%

Note: Lines (1) to (9) are all expressed as a % of premium.

Assumptions

(a) UW Tax Rate =	35.00%
(b) Inv. Income Tax Rate =	23.41%
(c) Inv. Yield =	3.96%
(d) P/S Ratio =	1.14
(e) NW/S Ratio =	1.16
(f) Installment Fee Income=	0.71%
(g) Additional TRA tax=	0.33%
(h) Net Cost of Reinsurance	33.32%

NOTES TO EXHIBIT RB-19, Page 1A

1. The expense provisions are those used on page C-3 of Exhibit RB-1.

2. Selected by Rate Bureau.

3. See assumption (f) below.

4. [(2)+(3)] x (a).

5. See assumption (g) below.

6. (2) + (3) - [(4) + (5)].

7. Pages 7-10. Investment income on agents' balances equals 0.131 x 1.032 x (c), where 0.131 is agents' balances for premiums due less than 90 days and 1.032 is the factor to include the effects of agents' balances or uncollected premiums overdue for more than 90 days.

8. (c) x [1/(d) + (0.6347 x 0.4373)], where 0.6347 is the prepaid expense ratio from page 7 and 0.4373 is the unearned premium reserve to premium ratio from page 7.

9. (6) + (7) + (8).

10. (d) / (e).

11. (9) x (10).

ASSUMPTIONS

(a) Internal Revenue Code.

(b) See RB-19, pp. 11-13; 1-avg post-tax yield/avg pre-tax yield.

(c) See RB-19, pp. 11-13; average of current and embedded yields.

(d) See RB-19, p. 14

(e) See RB-19, p. 15.

(f) See RB-19, p. 3.

(g) See RB-19, pp. 4-6

(h) See prefiled testimony.

NORTH CAROLINA
DWELLING FIRE/EC INSTALLMENT PAYMENT INCOME
(in thousands)

Year	Inst. Charges as a % of Prem.
2007	0.86%
2006	0.68%
2005	0.65%
2004	0.68%
2003	0.70%
Average	0.71%
Selected Value	0.71%

Source: From ISO.

NORTH CAROLINA
DWELLING EXTENDED COVERAGE

ESTIMATION OF TRA TAXABLE INCOME

1	Earned Premium (current year)	100.00%
2	UEPR (previous year)	39.32%
3	UEPR (current year)	44.03%
4	Increase = (3)-(2)	4.71%
5	20% of Increase = Taxable Income	0.94%
6	Tax Liability = (5)x.35	0.33%
7	Unpaid Losses (current year)	2.51%
8	Discounted unpaid losses (current year)	2.43%
9	Unpaid Losses (previous year)	2.24%
10	Discounted unpaid losses (previous year)	2.17%
11	Additional Income	0.01%
12	Tax Liability	0.00%
	Other Tax Liabilities	
13	UEP	0.33%
14	Discounting of Loss Reserves	0.00%
15	Total	0.33%

NORTH CAROLINA
DWELLING EXTENDED COVERAGE
CALCULATION OF TAXABLE INCOME

(1) AY Avg Acc Date	(2) AY Pay Pattern	(3) Percent Unpaid	(4) Total Losses	(5) Unpaid Losses
0.5	94.80%	5.20%	37.602	2.0
1.5	99.00%	1.00%	33.580	0.3
2.5	99.60%	0.40%	29.988	0.1
3.5	99.80%	0.20%	26.780	0.1
4.5	99.90%	0.10%	23.915	0.0
5.5	99.90%	0.10%	21.357	0.0
6.5	100.00%	0.00%	19.072	0.0
7.5	100.00%	0.00%	17.032	0.0
8.5	100.00%	0.00%	15.210	0.0
9.5	100.00%	0.00%	13.583	0.0
10.5	100.00%	0.00%	12.130	0.0
11.5	100.00%	0.00%	10.832	0.0
12.5	100.00%	0.00%	9.673	0.0
13.5	100.00%	0.00%	8.639	0.0
14.5	100.00%	0.00%	7.714	0.0
15.5	100.00%	0.00%	6.889	0.0
16.5	100.00%	0.00%	6.152	0.0
17.5	100.00%	0.00%	5.494	0.0
18.5	100.00%	0.00%	4.906	0.0
19.5	100.00%	0.00%	4.381	0.0
20.5	100.00%	0.00%	3.913	0.0
21.5	100.00%	0.00%	3.494	0.0
22.5	100.00%	0.00%	3.120	0.0
23.5	100.00%	0.00%	2.787	0.0
24.5	100.00%	0.00%	2.489	0.0
25.5	100.00%	0.00%	2.222	0.0
26.5	100.00%	0.00%	1.985	0.0
27.5	100.00%	0.00%	1.772	0.0
28.5	100.00%	0.00%	1.583	0.0
29.5	100.00%	0.00%	1.413	0.0
30.5	100.00%	0.00%	1.262	0.0
31.5	100.00%	0.00%	1.127	0.0
32.5	100.00%	0.00%	1.007	0.0
33.5	100.00%	0.00%	0.899	0.0
34.5	100.00%	0.00%	0.803	0.0
35.5	100.00%	0.00%	0.717	0.0
36.5	100.00%	0.00%	0.640	0.0
37.5	100.00%	0.00%	0.572	0.0
38.5	100.00%	0.00%	0.511	0.0
39.5	100.00%	0.00%	0.456	0.0
40.5	100.00%	0.00%	0.407	0.0
41.5	100.00%	0.00%	0.364	0.0
42.5	100.00%	0.00%	0.325	0.0
43.5	100.00%	0.00%	0.290	0.0
44.5	100.00%	0.00%	0.259	0.0
45.5	100.00%	0.00%	0.231	0.0
46.5	100.00%	0.00%	0.207	0.0
47.5	100.00%	0.00%	0.184	0.0
48.5	100.00%	0.00%	0.165	0.0
49.5	100.00%	0.00%	0.147	0.0
50.5	100.00%	0.00%	0.131	0.0
51.5	100.00%	0.00%	0.117	0.0
52.5	100.00%	0.00%	0.105	0.0
53.5	100.00%	0.00%	0.094	0.0
54.5	100.00%	0.00%	0.084	0.0
55.5	100.00%	0.00%	0.075	0.0
56.5	100.00%	0.00%	0.067	0.0
57.5	100.00%	0.00%	0.059	0.0
58.5	100.00%	0.00%	0.053	0.0
59.5	100.00%	0.00%	0.047	0.0
60.5	100.00%	0.00%	0.042	0.0
61.5	100.00%	0.00%	0.038	0.0
62.5	100.00%	0.00%	0.034	0.0
63.5	100.00%	0.00%	0.030	0.0
64.5	100.00%	0.00%	0.027	0.0
65.5	100.00%	0.00%	0.024	0.0
66.5	100.00%		0.021	0.0
Sum				2.51

(6) AY at current year end	(7) Discount Factor	(8) Discounted Weight
2009	0.966430	1.9
2008	0.966174	0.3
2007	0.980298	0.1
2006	0.980298	0.1
2005	0.980298	0.0
2004	0.980298	0.0
2003	0.980298	0.0
2002	0.980298	0.0
2001	0.980298	0.0
2000	0.980298	0.0
1999	0.980298	0.0
1998	0.980298	0.0
1997	0.980298	0.0
1996	0.980298	0.0
1995	0.980298	0.0
1994	0.980298	0.0
1993	0.980298	0.0
1992	0.980298	0.0
1991	0.980298	0.0
1990	0.980298	0.0
1989	0.980298	0.0
1988	0.980298	0.0
1987	0.980298	0.0
1986	0.980298	0.0
1985	0.980298	0.0
1984	0.980298	0.0
1983	0.980298	0.0
1982	0.980298	0.0
1981	0.980298	0.0
1980	0.980298	0.0
1979	0.980298	0.0
1978	0.980298	0.0
1977	0.980298	0.0
1976	0.980298	0.0
1975	0.980298	0.0
1974	0.980298	0.0
1973	0.980298	0.0
1972	0.980298	0.0
1971	0.980298	0.0
1970	0.980298	0.0
1969	0.980298	0.0
1968	0.980298	0.0
1967	0.980298	0.0
1966	0.980298	0.0
1965	0.980298	0.0
1964	0.980298	0.0
1963	0.980298	0.0
1962	0.980298	0.0
1961	0.980298	0.0
1960	0.980298	0.0
1959	0.980298	0.0
1958	0.980298	0.0
1957	0.980298	0.0
1956	0.980298	0.0
1955	0.980298	0.0
1954	0.980298	0.0
1953	0.980298	0.0
1952	0.980298	0.0
1951	0.980298	0.0
1950	0.980298	0.0
1949	0.980298	0.0
1948	0.980298	0.0
1947	0.980298	0.0
1946	0.980298	0.0
1945	0.980298	0.0
1944	0.980298	0.0
1943	0.980298	0.0
Sum		2.43

(9) AY at prior year end	(10) Weight	(11) Discount Factor	(12) Discounted Weight
2008	1.7461482	0.966430	1.7
2007	0.2998757	0.966174	0.3
2006	0.1071186	0.980298	0.1
2005	0.0478298	0.980298	0.0
2004	0.0213566	0.980298	0.0
2003	0.019072	0.980298	0.0
2002	0	0.980298	0.0
2001	0	0.980298	0.0
2000	0	0.980298	0.0
1999	0	0.980298	0.0
1998	0	0.980298	0.0
1997	0	0.980298	0.0
1996	0	0.980298	0.0
1995	0	0.980298	0.0
1994	0	0.980298	0.0
1993	0	0.980298	0.0
1992	0	0.980298	0.0
1991	0	0.980298	0.0
1990	0	0.980298	0.0
1989	0	0.980298	0.0
1988	0	0.980298	0.0
1987	0	0.980298	0.0
1986	0	0.980298	0.0
1985	0	0.980298	0.0
1984	0	0.980298	0.0
1983	0	0.980298	0.0
1982	0	0.980298	0.0
1981	0	0.980298	0.0
1980	0	0.980298	0.0
1979	0	0.980298	0.0
1978	0	0.980298	0.0
1977	0	0.980298	0.0
1976	0	0.980298	0.0
1975	0	0.980298	0.0
1974	0	0.980298	0.0
1973	0	0.980298	0.0
1972	0	0.980298	0.0
1971	0	0.980298	0.0
1970	0	0.980298	0.0
1969	0	0.980298	0.0
1968	0	0.980298	0.0
1967	0	0.980298	0.0
1966	0	0.980298	0.0
1965	0	0.980298	0.0
1964	0	0.980298	0.0
1963	0	0.980298	0.0
1962	0	0.980298	0.0
1961	0	0.980298	0.0
1960	0	0.980298	0.0
1959	0	0.980298	0.0
1958	0	0.980298	0.0
1957	0	0.980298	0.0
1956	0	0.980298	0.0
1955	0	0.980298	0.0
1954	0	0.980298	0.0
1953	0	0.980298	0.0
1952	0	0.980298	0.0
1951	0	0.980298	0.0
1950	0	0.980298	0.0
1949	0	0.980298	0.0
1948	0	0.980298	0.0
1947	0	0.980298	0.0
1946	0	0.980298	0.0
1945	0	0.980298	0.0
1944	0	0.980298	0.0
1943	0	0.980298	0.0
Sum			2.17

NOTES TO PAGES 4 AND 5

Page 4

1 Current year earned premium

2 Estimated prior year UEPR as percent of current year earned premium given assumed premium growth rate

3 Annual Statement, page 15, UEPR/Earned Premium for all companies writing this line of insurance in North Carolina.

4 Line (3) - line (2)

5 Line (4) x .20.

6 Line (5) x .35.

7 Unpaid current-year losses at year-end as a percent of premium. Sum of Page 5, Column (5).

8 Discounted unpaid current-year losses at year-end as a percent of premium. Sum of Page 5, Column (8).

9 Unpaid prior-year losses at year-end as a percent of premium. Sum of Page 5, Column (5) divided by (1+ assumed growth rate).

10 Discounted unpaid prior-year losses at year-end as a percent of premium. Sum of Page 5, Column (12).

11 Line (7) - Line (8) - [Line (9) - Line (10)]

12 Line (11) x .35

13 Line (6)

14 Line (12)

15 Line (13) + Line (14)

Page 5

1 Midpoint of number of years since end of accident period.

2 Accident year payout pattern developed from policy year developed losses.

3 1 - Column (2)

4 Losses, given assumed historical growth rate.

5 Column (3) x Column (4)

6 Accident Year at current year end

7 Discount factor per IRS Regulations.

8 Column (5) x Column (7)

9 Accident Year at prior year end

10 Column (3), previous period x Column (4), current period

11 Discount factor per IRS Regulations.

12 Column (10) x Column (11)

NCRB INVESTMENT INCOME CALCULATION
DWELLING EXTENDED COVERAGE
Projected Investment Earnings on Loss, Loss
Adjustment Expense and Unearned Premium Reserves

A. UNEARNED PREMIUM RESERVES		
1. Direct Earned Premiums		1,000,000
2. Mean UEPR	43.73%	437,300
3. Deductions for prepaid expenses		
Commissions & Brokerage	12.20%	
Taxes, Licenses & Fees	1.58%	
One Half Other Acquisition Expense	1.33%	
One Half General Expense	1.41%	
Cost of Reinsurance	46.95%	
Total	63.47%	
4. Deduction for Prepaid Expenses: (2) x (3)		277,541
5. Net UEPR Subject to Inv (4) - (2)		159,759
B. Loss and Loss Expense Reserves		
1. Direct Earned Premium		1,000,000
2. Expected Inc L & LAE to Premium Ratio	0.3760	376,023
3. Expected Mean L&LAE Reserve to Inc. L & LAE Ratio	0.754	283,346
C. Net PH Funds Subj to Inv (A5 + B3)		443,105
D. Average Rate of Return		3.96%
E. Investment Earnings from Net Reserves (D) x (E)		17,547
F. Average Rate of Return as a Percent of Direct Earned Premium (E) / (A1)		1.75%

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
All calculations are displayed per $1,000,000 direct earned premiums.

Line A-2
The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/current year for all companies writing Dwelling insurance in North Carolina. These data are from page 15 of the Annual Statement.

1. Collected Earned Premium for Calendar Year ended 12/31/current year	171,488,046
2. Unearned Premium Reserve as of 12/31/prior year	74,473,320
3. Unearned Premium Reserve as of 12/31/current year	75,504,872
4. Mean Unearned Premium Reserve 1/2 [(2) + (3)]	74,989,096
5. Ratio (4) ÷ (1)	0.4373

Line A-3
Deduction for prepaid expenses:
Production costs and a large part of the other company expenses in connection with the writing and handling of Dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/current year.

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line B-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/current year.

Line B-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses for Dwelling insurance. This ratio is based on North Carolina companies' Page 15 annual statement data and has been adjusted to include loss adjustment expense reserves.

1	Incurred Losses for CY	2003	79,674,595
2	Incurred Losses for CY	2004	47,052,222
3	Incurred Losses for CY	2005	40,020,088
4	Incurred Losses for CY	2006	50,433,255
5	Incurred Losses for CY	2007	30,306,506
6	Loss Reserves as of 12/31	2002	27,203,722
7	Loss Reserves as of 12/31	2003	33,107,270
8	Loss Reserves as of 12/31	2004	29,107,220
9	Loss Reserves as of 12/31	2005	28,656,583
10	Loss Reserves as of 12/31	2006	37,122,031
11	Loss Reserves as of 12/31	2007	30,883,741
12	Mean Loss Reserve	2003	30,155,496
13	Mean Loss Reserve	2004	31,107,245
14	Mean Loss Reserve	2005	28,881,902
15	Mean Loss Reserve	2006	32,889,307
16	Mean Loss Reserve	2007	34,002,886
17	Loss Reserve Ratio	2003	0.378
18	Loss Reserve Ratio	2004	0.661
19	Loss Reserve Ratio	2005	0.722
20	Loss Reserve Ratio	2006	0.652
21	Loss Reserve Ratio	2007	1.122
22	Average Loss Reserve Ratio		0.707
23	Ratio of LAE Reserves to Loss Reserves		0.236
24	Ratio of Incurred LAE to Incurred Losses		0.160
25	Loss and LAE Reserve/Incurred Loss&LAE		0.754

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line E

The average rate of return is calculated as the arithmetic mean of the embedded and current yields. The embedded yield is the sum of two ratios: the most recent ratio of investment income to invested assets, plus the ten year average ratio of capital gains to invested assets (see page 12). The current yield is the estimated, currently available rate of return (including income and expected capital gains) on the property/casualty industry investment portfolio (see page 11).

Embedded Yield =	4.17% + 0.58% =	4.75%
Current Yield =		3.18%
Average =		3.96%

PORTFOLIO YIELD AND TAX RATE - CURRENT YIELD

(1) Investable Asset	(2) Percent of Assets	(3) Estimated Prospective Pre-Tax Return	(4) Tax Rate	(5) Estimated Prospective Post-Tax Return
Bonds				
U.S. Govt	9.47%	2.18%	35.00%	1.42%
States & territories	14.48%	2.59%	5.25%	2.45%
Special revenue	25.58%	2.81%	5.25%	2.66%
Public Utilities	1.38%	2.93%	35.00%	1.90%
Industrial	22.09%	2.68%	35.00%	1.74%
Preferred stock	1.84%	5.81%	14.18%	4.99%
Common stock	15.07%	9.60%	30.39%	6.68%
Mortgage Loans	0.42%	5.02%	35.00%	3.26%
Real estate	0.92%	4.08%	35.00%	2.65%
Cash & short-term invs.	8.74%	0.14%	35.00%	0.09%
Rate of Return Pre-Inv Exp	100.00%	3.56%	23.35%	2.73%
Investment Expenses		0.38%	35.00%	0.25%
Portfolio Rate of Return		**3.18%**	21.96%	**2.48%**

Sources:

Various issues of Federal Reserve Statistical Release, H.15(519).
Mergent Bond Record.
Standard & Poor's CreditWeek.
Value Line Investment Survey, Part II.
Ibbotson Associates, "SBBI Valuation Edition 2010 Yearbook."
Ibbotson and Siegel, AREUEA Journal, 1984.
A.M. Best's Aggregates & Averages, 2009 edition.

PORTFOLIO YIELD AND TAX RATE
EMBEDDED YIELD

	Income	Tax Rate
Bonds		
Taxable	26,065,645	35.00%
Non-Taxable	16,923,546	5.25%
Stocks		
Taxable	5,244,126	14.18%
Non-Taxable	1,234,199	5.25%
Mortgage Loans	312,607	35.00%
Real Estate	1,772,757	35.00%
Contract Loans	692	35.00%
Cash / Short Term Inv.	2,660,197	35.00%
All Other	4,262,121	35.00%
Total	58,475,890	23.89%
Inv. Expenses	4,710,400	35.00%
Net Inv. Income	53,765,490	22.92%
Mean Invested Assets	1,288,393,875	
Inv. Inc. Yield Rate	4.17%	22.92%
Capital Gains (10 yr. avg) (% Of Inv. Assets)	0.58%	35.00%
Invest. Yield Rate (pre-tax)	**4.75%**	**24.38%**
Invest. Yield Rate (post-tax)	**3.59%**	

Source: Best's Aggregates and Averages, 2009 Edition, p. 12 (Exhibit of Net Investment Income, Col. 2 (Earned During Year)).
Capital Gains: RB-19, page 13

CAPITAL GAINS OR LOSSES
AS A PERCENT OF MEAN ASSETS
(All amounts in thousands of dollars)

Calendar Year	Mean Total Invested Assets	Realized Capital Gains	
		Amount	Percent
1999	797,920,622	13,016,157	1.63%
2000	794,195,460	16,204,649	2.04%
2001	785,530,275	6,630,679	0.84%
2002	815,037,267	2,770,997	0.34%
2003	908,024,056	6,280,196	0.69%
2004	1,018,810,319	9,113,199	0.89%
2005	1,120,112,663	12,194,908	1.09%
2006	1,217,432,187	3,587,228	0.29%
2007	1,297,478,130	9,031,778	0.70%
2008	1,288,393,875	(21,018,623)	-1.63%
Total	10,042,934,851	57,811,168	0.58%

*Mean total invested assets is the average of the current year and prior year values of total invested assets (annual statement page 2, Line 9).

Source: "Best's Aggregates & Averages--Property-Casualty," various editions

NORTH CAROLINA
DWELLING FIRE AND EXTENDED COVERAGE

PREMIUM-TO-SURPLUS RATIOS

Year	Fire	Extended Coverage
1999	1.054	1.013
2000	1.047	1.095
2001	1.153	1.198
2002	1.302	1.330
2003	1.271	1.244
2004	1.297	1.288
2005	1.225	1.196
2006	1.001	1.010
2007	0.948	0.967
2008	1.003	1.034
Five-Year Average	1.095	1.099
Ten-Year Average	1.130	1.137

Notes:

1 Ratios based on net premium written.
2 From Best's Data Service and Best's Aggregate and Averages.
3 Top 30 groups each year.

NORTH CAROLINA DWELLING FIRE/EC INSURANCE
CALCULATION OF GAAP NET WORTH TO SURPLUS RATIO

	2004	2005	2006	2007	2008
Policyholder Surplus	391,294,425,276	425,759,944,800	486,231,429,443	517,875,621,253	457,293,555,877
+ Deferred Acquisition Costs	25,336,389,277	26,322,460,773	27,351,959,298	27,556,696,928	27,267,204,493
+ Non-Admitted DTA Provision	19,919,892,745	20,389,557,802	19,710,944,304	20,970,760,003	34,146,635,006
+ Non-admitted Assets (non-tax part)	22,629,830,486	23,050,311,315	25,215,840,687	28,591,349,752	28,634,028,619
+ Provision for Reinsurance	5,971,612,606	5,757,810,700	5,407,923,691	4,619,150,713	4,002,703,029
+ Provision for FASB 115(after-tax)	13,697,026,260	4,664,626,701	4,267,041,184	6,555,479,760	(14,840,617,729)
- Surplus Notes	(10,569,400,392)	(11,102,999,699)	(10,633,190,656)	(10,147,724,269)	(12,270,695,235)
GAAP-adjusted Net Worth	468,279,776,257	494,841,712,392	557,551,947,951	596,021,334,139	524,232,814,060
Ratio of GAAP Net Worth to Statutory Surplus	1.20	1.16	1.15	1.15	1.15
Five Year Average	1.16				

Source: ISO