

**COMMONWEALTH OF MASSACHUSETTS  
DIVISION OF INSURANCE**

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**APPLICATION OF MPIUA FOR APPROVAL OF RATE  
REVISION EFFECTIVE ON OR AFTER JULY 1, 2007** ) **Docket No. R2007-02**

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**BRIEF OF THE ATTORNEY GENERAL**

The Attorney General submits this final brief in the 2007 rate proceedings for Massachusetts Property Insurers Underwriting Association (MPIUA)<sup>1</sup> insurance rates. The proposed rates are excessive and insupportable. The MPIUA (1) used excessive and unreasonable non-hurricane loss projections, (2) employed an erroneous and unsupported hurricane model, and (3) overcharged consumers for purported reinsurance costs.

**Introduction**

The MPIUA seeks a rate increase of 13.2%. Ex. 2, FP 0055. For the coastal territories, including Territory 37—which in 2006 accounted for 35% of MPIUA premium, a proportion which will be even higher in the policy year<sup>2</sup> and which is more than 300% higher than any other territory, Ex. 3, FP 0609 (Golembeski), Ex. 65, p. 20—the proposed increase is 25%. *Id.* These proposed increases follow approved increases of 12.8% statewide, Ex. 5, and 25% in Territory 37, Ex. 2, FP 0065, in October 2006.

The MPIUA acknowledges that each element of its filing must be reasonable, and that if any element in its filing—losses, expected hurricane losses, or the reinsurance charge—is unreasonable, the rate will be unreasonable. Tr. 3, p. 266:3-11 (Golembeski).

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<sup>1</sup> The MPIUA is the residual market mechanism for Massachusetts homeowners insurance. The statutorily created body is an association of Massachusetts insurers who together provide home insurance to consumers who cannot obtain coverage in the open market. Rates for MPIUA insurance (called the “FAIR Plan”) must be approved by the Commissioner of Insurance. G.L. c. 175C § 5(c).

<sup>2</sup> Territory 37 premium is growing at a rate that is more than 100% faster than statewide premium. Ex. 65, p. 173.

### **The MPIUA's Proposed Increase Is Unreasonable and Unnecessary**

The MPIUA's filing (1) vastly overstates projected non-hurricane losses by using an inflation-only trend, ignoring the low-risk influx and the loss reductions in Territory 37, and giving nearly half weight to pre-2004 data and no weight to 2006 data, (2) overstates hurricane losses by using the RMS model, which is inconsistent with data on the frequency and intensity of New England hurricanes,<sup>3</sup> and (3) includes a 22.9% charge for reinsurance (44.1% in Territory 37) that is unsupported, inconsistent with the reinsurers' net cost, and that includes hurricane losses based on the discredited RMS short-term model. The proposed increase is unreasonable.

The MPIUA's increase is also unnecessary. The data show that --the MPIUA is highly profitable. During its last three and a half fiscal years, the MPIUA made a profit of \$127.5 million on premium of \$599.7 million, a profit ratio of 21.3%.<sup>4</sup> Ex. 65, p. 183 (Schwartz). The MPIUA profit as a percent of premium increased from 8.6% in fiscal 2004 to 20.6% in fiscal 2005 to 24.4% in fiscal 2006. *Id.*, p. 184.<sup>5</sup>

Both the underwriting income as well as investment income has been increasing. The total income as a percent of premium exceeded 20% in each period from 2005 to 2007.... These are very high profit values.

*Id.*, p. 184.

--MPIUA rates were not inadequate, even before the approved October 2006 rate increases. The data show that the capped increases of 2.8% in 2004 and 3.2% in 2005, Tr. 3, pp. 265:17-266:1 (Golembeski), and the 0% change in the 2006 fiscal year were more

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<sup>3</sup> The MPIUA averages the results of the RMS and AIR models. The Attorney General's Motion for Sanctions based on the MPIUA's and its modelers' noncompliance with orders requiring production of model and reinsurance materials, which seeks the exclusion of all premium or rating amounts based on hurricane loss modeling or reinsurance, or, in the alternative, the application of a negative rate adjustment to the otherwise determined MPIUA rate, is pending.

<sup>4</sup> This is considerably higher than the hurricane loads in the MPIUA's filings. Ex. 6. The hurricane loads were based in part on the RMS model and thus were themselves unreasonably high. *See infra* at 16.

<sup>5</sup> During the first half of fiscal 2007 (ending March 31, 2007), profit was 28.3%. *Id.*, p. 184.

than sufficient to pay all of the MPIUA's losses and expenses and to cover the filings' hurricane loads—and still provide the MPIUA in fiscal years 2005 and 2006 with a substantially larger profit than was targeted in the filing. Tr. 3, p. 329:4-9 (Golembeski); *compare* Ex. 5, Ex. 6, and Ex. 8. Indeed, the 2.8%, 3.2%, and 0% increases in 2004-2006 produced rates that *over-estimated the rate needed* to pay losses and expenses and the hurricane load. The MPIUA's much higher filed requests—12.7% higher in 2004, 17.9% in 2005, and 29.3% in 2006, Ex. 5—were inflated and inaccurate, and, like the current filing, would have produced vastly excessive rates.

--MPIUA rates in Territory 37 *should be lower* than voluntary market rates. The MPIUA has a substantial cost advantage over the voluntary insurers. Its expenses are 7-8% lower than those of voluntary insurers, and it has lower capital raising expenses.<sup>6</sup> Ex. 65, p. 187 (Schwartz).

The MPIUA's filing is intended to raise rates in Territory 37 so that the FAIR Plan is priced above the voluntary market level. Ex. 3, FP 0610-0612. But the MPIUA concedes that all else equal, if costs are lower, rates *should be lower*:

Q. Similarly, if we had a situation where the FAIR Plan had lower expenses than a voluntary market company and all other things were the same, we would expect the FAIR Plan to have lower rates, would we not?

A. Yes....

Q. And if it turned out that an actuarially supported level, either because the FAIR Plan's losses in Territory 37 or its expenses overall were lower than those of a voluntary market company, you would not say the FAIR Plan rates should be higher than the voluntary market company's, would you?

A. No.

Tr. 3, pp. 324:4-9, 324:24-325:6 (Golembeski).

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<sup>6</sup> This is so for a number of reasons: *e.g.*, the MPIUA has no shareholders or owners, and it cannot expand into other lines or other jurisdictions. Ex. 65, p. 187 (Schwartz).

Overall, the FAIR Plan's underlying costs are at least 10% lower than those of voluntary carriers, Ex. 65, p. 187 (Schwartz). The FAIR Plan risk of loss in Territory 37 is indistinguishable from voluntary market risk. Tr. 3, pp. 319:18-320:17 (Golembeski). The FAIR Plan's Territory 37 rates should be lower than voluntary market rates.

The FAIR Plan was created by statute, and the statute explicitly states that in the rate approval process, consideration shall be given "to the intent of this chapter to make basic property insurance available at reasonable cost...." G.L. c. 175C, § 5 (b). Any doubt as to aspects of the filing that raise rates should be resolved in favor of "reasonable cost."

### **I. MPIUA'S NON-HURRICANE LOSS COST PROJECTIONS ARE EXCESSIVE AND UNREASONABLE**

In the filing, the MPIUA substantially over-estimates non-hurricane losses by projecting only the inflationary increase in losses, ignoring the low-risk nature of Territory 37 business and the improvement in Territory 37 losses, giving nearly half the weight to pre-2004 data and no weight to 2006 data, and improperly applying a "Loss Trend Adjustment Factor" to increase the inflation-only trend when FAIR Plan data show that the loss trend is decreasing.

#### **A. The Low-Risk Nature of Territory 37 Business and the Reduction in Territory 37 Losses Over Time Are Undisputed**

In 2004, voluntary market insurers began leaving the Cape and Islands. Between 2004 and 2006, 43,300 voluntary market insureds in Territory 37 were non-renewed and forced to purchase homeowners' insurance from the FAIR Plan. Ex. 3, pp. 8-9 (Golembeski). As a result of the migration of voluntary market insureds into the FAIR Plan, MPIUA Territory 37 premium volume increased by 132% in 2004, 111% in 2005, and 44% in 2006, and was 600% higher in 2006 than in 2003. Ex. 2, p. 73; Ex. 65, p. 13.

Most of MPIUA's Territory 37 business is neither seasonal nor expensive but consists of ordinary homes. Tr. 3, pp. 288:22-289:1 (Golembeski).

The new Territory 37 insureds were not high-risk insureds.

Q. Until these companies nonrenewed the policyholders, is it correct that these insureds were written in the voluntary market?

A. Yes.

Q. So they were not considered high-risk insureds at the time the companies pulled out of the market?

A. That's correct.

Tr. 3, pp. 319:18-320:17 (Golembeski).<sup>7</sup>

The MPIUA concedes that Territory 37 loss ratios have improved significantly since 2004, when voluntary market business began migrating into the FAIR Plan.

Q. Is it also true that since this shift began in 2004, the FAIR Plan's non-hurricane loss ratios have dropped significantly?

A. Yes.

*Id.*, p. 321:6-9.<sup>8</sup> The reason for the improvement in loss experience is also not in dispute: the new MPIUA Territory 37 business was low-risk business:

Q. Isn't it also the case that one of the reasons that loss ratios have dropped is that the insureds that are now coming into the FAIR Plan are not high-risk insureds; they are ordinary, voluntary market insureds who were either nonrenewed or unable to find insurance?

A. There's certainly probably a better mix of business than the FAIR Plan has had historically in that it would be better properties, mostly single family homes, without some of the loss problems that you have in some of the urban centers.

Tr. 3, p. 322:1-11 (Golembeski). *See also* Ex. 65, p. 4 (Gotham).

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<sup>7</sup> The FAIR Plan is "picking up business simply because the voluntary market doesn't want to accept hurricane exposure. It could be a very good risk. It could be a very good risk from a non-hurricane perspective." Tr. 4, p. 529:2-8 (Ericksen).

<sup>8</sup> Mr. Ericksen similarly testified that "I know that the experience has been improving," that the losses "have steadily declined," and that "these loss ratios are declining." Tr. 4, pp. 553:8-9, 563:1-2, 583:24-584:1 (Ericksen).

The reduction in Territory 37 non-hurricane losses is clearly reflected in the data. The (untrended on-level) Territory 37 loss ratio dropped from 47% in 2003 to 24.7% in 2006, a reduction of 41%. Ex. 65, p. 81.<sup>9</sup> Territory 37 loss pure premiums fell from \$481 in 2003 to \$259 in 2006, a reduction of 46%. *Id.*, p. 82. Non-territory 37 loss pure premiums, by contrast, fell from \$562 in 2003 to \$543 in 2006, a reduction of only 3%, *id.*, p. 84, thus ruling out random factors, such as weather. *See also* Tr. 14, p. 2182:7-22 (Gotham). (None of these values are disputed by the MPIUA.)

The data also show that the improvement in Territory 37 loss experience was not random:

[Internal] Exhibit 3 shows four and five year loss ratio trends of -18 and -12 percent annually with good coefficients of determination. [Internal] Exhibit 4 displays loss pure premium 5, 4 and 3 year regressions of -9, -17 and -11 percent annually with generally good coefficients of determination. The 3 and 4 year regressions best reflect the change in the quality of the Territory 37 business as a result of the transfer of voluntary market business to the FAIR Plan during the 2004-2006 period.

Ex. 65, p. 5 (Gotham).

### **B. The MPIUA Loss Trend Projects Only the Inflationary Increase in Territory 37 Losses**

The MPIUA's loss trend is an inflation-only trend, ignoring other relevant loss data. "Although it is often assumed that the current cost indices fully capture the changes in average loss levels over time, the cost indices are more appropriately considered a proxy for the inflationary effect on Homeowners losses." Ex. 2, FP 0037. The MPIUA's trend assumes no change in number and type of loss and simply shifts the value of historical losses to the present using a CPI-type measure, Tr. 4, p. 536:1-3:

A. . . . [W]hat I'm saying is if that specific event, that same event that house [loss], happened in [the policy year], it would result in a larger loss payment simply because of inflationary effects. Things are going to cost more.

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<sup>9</sup> The reduction in loss ratios rules out distributional changes in deductibles and types of policies, which affect both the premium and loss in the loss ratio. Tr. 14, pp. 2154:10-2155:8 (Gotham).

That's all I'm saying. *If the exact same event happened, it would cost more money.*

*Id.*, pp. 524:20-525:3 (emphasis added).

The MPIUA loss trend does not take into account non-inflation factors affecting losses:

A. ...[T]hat loss trend factor is not looking to address other issues; it's really looking at inflationary effects. There can be other issues that can affect why the loss ratios may or may not be changing between years.

So the loss trend factor has a specific intent. It's not covering all possible changes in the loss experience over time.

The loss trend factors are reflecting one component why losses would be expected to change for the MPIUA. I got the feeling that you're trying to get me to say that these loss trend factors reflect all changes that could be affecting losses, and I wouldn't agree to that, because that's not what it's intended to do.

*Id.*, pp. 519:15-22, 522:7-13.

### **C. The MPIUA Loss Trend Does Not Reflect Loss Reductions Caused by Changes in the Riskiness and Loss Experience of Territory 37 Policyholders**

MPIUA's loss trend inaccurately and unreasonably ignores FAIR Plan loss data and fails to reflect reductions in Territory 37 loss frequency and severity and the improvement in Territory 37 risk starting in 2004. As a result, its loss projections are unreasonable and excessive.

#### **1. The MPIUA Inflationary Loss Trend Is Not Based on Territory 37 Loss Data**

The MPIUA acknowledges that the purpose of the loss trend procedure is to accurately predict the loss experience *of Territory 37 insureds during the policy year*.

Q. Would you agree that it would be unreasonable to select a 2007 Territory 37 projection that, based on the past experience or current data, is likely to be an inaccurate projection of the Territory 37 loss ratio during the policy year?

A. I think the intent—I mean, it's a confusing statement to me. I think the intent is to estimate a prospective estimate based upon the available data that we have.

Q. The best possible estimate for the policy year for this particular territory?

A. That was the intent.

Tr. 4, p. 516:1-13 (Ericksen). The trend applied to Territory 37 losses is not intended to substitute a statewide FAIR Plan loss ratio, a statewide total market loss ratio, or a countrywide loss ratio for the Territory 37 loss ratio:

Q. Would you agree that the purpose of the calculations on Page 106 [of Exhibit 2] is to predict as accurately as possible the FAIR Plan Territory 37 loss ratios during the policy year?

A. Correct.

Q. And just so it's clear, you're not trying to select here a statewide FAIR Plan loss ratio or a statewide total market loss ratio correct?

A. That's correct....

Q. Or nationwide; it's not a nationwide loss ratio?

A. This is just MPIUA's experience... Territory 37.

*Id.*, p. 515:6-24.

But the inflation-only loss trend used by the MPIUA is not based on Territory 37 loss data and does not attempt to project the actual inflation (or deflation) in losses in Territory 37. The MPIUA's Territory 37 loss trend is a countrywide trend:

Q. Now you referred to the loss trend index as being based on country-wide data, generally, right?

A. The economic data is based upon countrywide economic data.

*Id.*, p. 535:23-24.

Actuarial standards state that the use of "data generated by the book of business being priced"—here the Territory 37 loss data—is preferred for trending. Ex. 65, p. 98, § 4.1. Non-insurance data—used by the MPIUA to obtain the Territory 37 loss trend—is least preferred. *Id.*



The MPIUA loss trend is based on countrywide economic indices and does not even reflect the inflation-only change in Territory 37 losses.

2. The MPIUA Loss Trend Does Not Take Into Account Reductions in Frequency and Severity Caused by Changes in the Riskiness in the Territory 37 Population

The MPIUA agrees that different factors affect losses in different territories, and that loss trends vary across territories:<sup>10</sup>

Q. You would agree that it is possible that a company can have different trends in different geographical areas within its business?

A. Certainly the—and we see it. I mean, the results will vary by territory.... Inflationary effects are going to affect all risk. Could there be other influences that are affecting certain geographic regions differently than other geographic regions? Yes, and they could cause the results to differ.

*Id.*, pp. 533:7-534:1.

Two aspects of losses change over time: the frequency of claims, which reflects the rate of accidents and the number of claims filed by insureds, and the severity of claims, which reflects the average cost or type of claim. The MPIUA loss trend does not take into account changes in frequency caused by the reduced riskiness in Territory 37 business:

Q. Now the loss trend numbers that you referred to earlier, you said, reflected... the inflation in the value of a claim, an average claim, assuming that claim was transposed from a historical period to a period into the future. Is that roughly what you said?

A. Correct.

Q. This trend would not reflect changes in frequency, right?

A. The economic—that's a fair characterization.

*Id.*, p. 536:4-15.

Nor does the MPIUA trend reflect reductions in severity or cost caused by a change in the risk or composition of the Territory 37 book of business:

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<sup>10</sup> The MPIUA's inflationary loss trend factors are the same for all territories within the FAIR Plan. *Compare* Column 7 on p. 106 and pp. 93-105, 107-26 in Ex. 2.

Q. And [the trend] wouldn't take into account changes in severity that were brought about by a different population of insureds in a projection period as compared to a historical period that produced a different set of claims?

A. Yes, that's one of the weaknesses of using economic indices purely.

*Id.*, pp. 536:19-537:1. The MPIUA loss trend "does not reflect any change in the frequency of claims, any growth in FAIR Plan exposures, or any improvement in the quality of the FAIR Plan book of business." Ex. 65, p. 3 (Gotham).<sup>11</sup>

3. The MPIUA Loss Procedure Gives Nearly Half the Weight to Data Earlier Than 2004 and No Weight to the Latest Year of Data, 2006

a. *Pre-2004 Data.* The MPIUA agrees that Territory 37 loss experience changed starting in 2004. Tr. 3, p. 321:6-9 (Golembeski); Tr. 4, pp. 553:8-9, 563:1-2, 583:24-584:1 (Ericksen). And the MPIUA concedes that when a population of insureds changes as a result of "extreme premium growth, re-underwriting or acquisition of a book of business from another carrier"—which describes the change in MPIUA Territory 37 business beginning in 2004—"if I had a book of business that was very different five years ago than it is today, then I would certainly want to give much less weight, presumably no weight to that older experience." *Id.*, pp. 4890:23-481:3.

The MPIUA's loss trending method, however, does not give "much less weight, presumably no weight," *id.*, to the experience prior to 2004—it gives nearly half the weight to the pre-2004 data. The MPIUA applies the inflation-only trend to losses from 2001,

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<sup>11</sup> The failure of the FAIR Plan's trend to reflect the improvement in FAIR Plan business may be explained by analogy to an automobile insurer that acquires better drivers within a particular geographical area. A trend that only reflects inflationary changes in losses does not taken into account the improvement in loss experience within the geographical area:

Q.... Let's say an individual insurance company A over time insured better drivers within a particular geographic area. Let's call that X. Is it correct that, all else equal, the company's overall loss trend would show a less positive, more negative direction within that geographical area X.

A. It depends upon how you define loss trend. Loss trend, if we're measuring inflationary effects, as we're dealing with here, it could be the exact same loss trend as any other company. *Id.*, p. 530:3-13.

2002, 2003, 2004 and 2005, obtaining separate trended results for each year and then averaging the results. Ex. 2, FP 0106. The average gives 30% weight to the 2005 value, and 25%, 20%, 15%, and 10% respectively to the earlier trended results. *Id.*, n. 13. This method gives 45% weight to the results of the inflated 2001, 2002, and 2003 values. *Id.*<sup>12</sup>

The pre-2004 loss data are not “reflective or relevant to the current situation.” Tr. 4, p. 480:21-22 (Ericksen). Territory 37 business is now low-risk business. While Territory 37 loss pure premium was comparable to (86% of) non-territory 37 loss pure premium in 2003, in 2006 it was 54% lower, Ex. 65, pp. 82, 84, reflecting the influx of low-risk business that increased Territory 37 FAIR Plan exposures by over 400%. *Id.*, p. 82. The size of the MPIUA Territory 37 book of business prior to 2004, moreover, was minuscule. The 2001 MPIUA Territory 37 premium (at current rate level) was 11% of the 2006 MPIUA Territory 37 premium, the 2002 premium 13%, and the 2003 premium 19.5%. Ex. 2, p. 106; Ex. 65, p. 47. The sum of FAIR Plan Territory 37 premium in 2001-2003 was about 15% of the 2004-2006 Territory 37 premium. “These years, therefore, cannot be described as representative of the experience that may be expected of the much larger group of risks now insured in the plan in this territory.” *Id.*, p. 5 (Gotham).

The MPIUA loss trend procedure, which gives 45% weight to the 2001-2003 data, is unreasonable.

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<sup>12</sup> While Mr. Ericksen testified that the weighting procedure reflects the change in Territory 37 loss experience, Tr. 4, p. 526:13-17 (Ericksen), (1) this is standard ISO procedure and was not adopted to take into account the change in Territory 37 business, Tr. 4, p. 535:9-19, (2) the weighting procedure gives nearly 50% weight to the years 2001-2003, before the change in the riskiness of FAIR Plan business occurred, Ex. 2, p. 106, n. 13, and (3) the weighting is applied after the trending occurs; thus, even 100% weight applied to the 2005 value does not reflect the trended reduction in losses between 2005 and the policy year. The MPIUA’s mix adjustment similarly does not take into account the fact that “Territory 37 losses themselves have been declining because the book of business within Territory 37 has been changing.” Tr. 5, p. 672:16-20 (Ericksen).

*b. 2006 Data.* The MPIUA filing does not include the latest available data, from 2006. But MPIUA concedes that “the more recent years are likely to be more reflective of the current conditions that will affect future loss activity.” Ex. 9, p. 0950 (Ericksen). The MPIUA also acknowledges that substitution of the 2006 data point for the 2001 data point would produce a more accurate estimate of policy year losses:

Q... On page 106, if we no removed the 2001 line and substituted the 2006 line, that would give a more accurate projected non-hurricane loss and LAE ratio for 2007 than the data that appear here, wouldn't you agree?

A. I would agree with the fact that it would be reflective of more recent experience and in general more recent experience is more reflective of the future.

*Id.*, pp. 505:21-506:5. The MPIUA stated that for a filing effective in mid-2008, as the current filing will be, “our normal procedure would be to include the 2006 data.” *Id.*, p. 502:16-17.<sup>13</sup>

To produce accurate rates, the latest data should be used. “The use of earlier data alone to determine 2008 rates will produce rates that are less accurate than rates based on the latest available data.” Ex. 65, p. 2 (Gotham). The use of the latest data is especially important in light of the rapid recent growth of the FAIR Plan, particular Territory 37:

the FAIR Plan book of business has been growing at a rapid rate; the premium growth rate in 2006 alone was approximately 20%. The bulk of this growth has come in Territory 37. Together with this growth in Territory 37 has come a material change in the character of Territory 37 FAIR Plan business. Each year since 2003, Territory 37 loss experience has improved in quality as the proportion of what is essentially good business in Territory 37 has increased. The changing nature of the business makes it actuarially critical to use the latest available data in the calculation of 2008 rates. *Id.*

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<sup>13</sup> The 2006 data were omitted from the filing primarily through an accident of timing; the filing was made in March 2007 but was completed in February, a month before the 2006 data became available. Tr. 5, p. 640:1-13 (Ericksen). Mr. Ericksen testified that his practice is to use the latest available data:

Q. Generally it's your practice when estimating policy rates to use the latest available data, right?

A. Correct.

Tr. 4, p. 501:15-17 (Ericksen).

The 2006 data show the continued substantial improvement in Territory 37 loss experience. The untrended loss ratio (on-level) dropped from 31.3% in 2005 to 24.7% in 2006, a reduction of 21% in one year. *Id.*, p. 81. The Territory 37 pure premium fell from \$321 to \$259, a reduction of 19%. *Id.*, p. 82. Statewide, loss pure premium dropped from \$507 in 2005 to \$458 in 2006, a reduction of about 10%. *Id.*, p. 83. Omitting the latest data produces inaccurate projections that unfairly and unnecessarily increase rates beyond the “reasonable cost” required by statute.

There is no dispute as to the 2006 data. The MPIUA did not disagree with or rebut the 2006 data in the Attorney General’s filing. “There is no actuarial justification for not including the 2006 data in the calculation of 2008 rates.” Ex. 65, p. 2 (Gotham).

#### 4. The MPIUA Loss Trend Method Produces Inaccurate Loss Projections

The MPIUA’s loss trend method, used at least since the 2003 filing, *compare* Ex. 2, p. 106 *and* Ex. 13, has produced consistently and vastly inaccurate loss projections.

*a. Territory 37.* In the last two rate filings, the MPIUA’s inflation-only loss trend and its reliance on pre-2004 data over-estimated actual non-hurricane Territory 37 loss ratios by 40.7% in 2005 and 133.7% in 2006. Exs. 14-16; Ex. 65, p. 191 (Schwartz). The MPIUA projected Territory 37 loss ratios in both filings of about 59%; the actual loss ratios were 42% in 2005 and 25% in 2006. *Id.* These are vast overstatements, “dramatically higher than the actual loss & LAE ratios.” *Id.*

*b. Statewide.* The MPIUA filings produce inaccurate predictions statewide during the period 2003-2006. *Id.*, pp. 185-86. Implemented rates were excessive by 10% of premium, while MPIUA’s indicated rates were excessive by more than 20%. *Id.*, p. 186.

[W]hat we see here is a pattern of four years in a row, or three and a half years in a row, that the actual underwriting profit in every year was higher than the expected underwriting

profit, and the difference between the actual and expected is growing over time.... [T]he projections of costs included in the prior MPIUA rate filings were excessive.

Tr. 13, p. 2031:5-15 (Schwartz).

While rate-making is prospective, comparison of past predictions with actual data is an important test—the only empirical test—of the accuracy of trend methods. The MPIUA’s method, which produced vastly inaccurate loss projections, fails this test.

#### **D. The MPIUA’s Loss Trend Add-on Is Unreasonable**

The MPIUA uses a loss trend add-on, referred to as a “Loss Trend Adjustment Factor,” to further increase the inflation-only trend (by 3-7%, Ex. 2, FP 0088). The MPIUA calculates the “Loss Trend Adjustment Factor” by regressing on quarterly ISO voluntary market data—not FAIR Plan data—for the period 2001 through 2005. *Id.*, FP 0087. Performing the same regression on Territory 37 FAIR Plan data produces substantial negative annual trends of -26% and -31% with very high R-squared values. Ex. 65, p. 85. There is no justification for increasing the inflation-only trend for Territory 37 when Territory 37 data show that the trend should be reduced.

Similarly, performing MPIUA’s regression on (a) 2002 through 2006 voluntary market data produces no trend adjustment, Ex. 65, pp. 4, 25, and (b) on internal FAIR Plan data produces a negative trend adjustment (-2% and -3%, with poor fits). *Id.*, p. 86. The MPIUA’s loss trend add-on is unreasonable.

#### **E. The Non-Hurricane Loss Projections in the MPIUA’s Filing Should Be Disapproved**

The MPIUA loss projections use an inflation-only trend, fail to reflect the improvement of FAIR Plan risk, give substantial weight to pre-2004 data and no weight to 2006 data, use a method that in past filings vastly over-predicted non-hurricane losses, and

adds a factor to increase the inflation-only trend when FAIR Plan data show that the trend is *decreasing*. The loss projections should be disapproved

*Territory 37.* The Attorney General's expert re-calculated the loss projections using FAIR Plan data, including the 2006 data, which reflected the growth and improvement in Territory 37 risk, and adjusted the MPIUA's inflation-only trend by -4%, giving effect to a portion of the regression trend in Territory 37 losses (-12% and -18%). *Id.*, pp. 5, 81.<sup>14</sup> The Attorney General's adjustment produces a projected 2008 Territory 37 loss ratio of 25.8%, *id.*, similar to (and slightly higher than) the 2006 loss ratio of 24.7%. Ex. 65, p. 81. This is a reasonable—and, given the similarity to the 2006 value, a conservative—estimate of the policy year loss ratio.

The MPIUA's prediction, 35.1%, by contrast, which reflects the inflation-only trend and the MPIUA's trend add-on, Ex. 2, p. 106, is 34% *higher* than the 2006 value when the loss ratio trend is significantly negative. Ex. 65, p. 81. This is unreasonable.

*Other Territories.* For territories other than Territory 37, the Attorney General's loss projections use 2006 data and remove the MPIUA's "Loss Trend Adjustment Factor." *Id.*, p. 4.<sup>15</sup> The Attorney General's loss projections use FAIR Plan data, employ the most current data, and take into account the reduced riskiness of Territory 37 non-hurricane losses. They are reasonable estimates of 2008 losses. MPIUA's loss projections, in contrast, failure to use FAIR Plan data, place substantial weight on pre-2004 data, and use an inflation only trend that does not take into account the reduced riskiness of Territory 37

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<sup>14</sup> The MPIUA agreed that the regression had a good fit. Tr. 4, pp. 585:24-586:2 (Ericksen).

<sup>15</sup> The results vary by territory. Ex. 65, pp. 34-60. For all territories other than Territory 37, the Attorney General's loss ratio projection is about 8.5% lower than the MPIUA's projection. *Compare id.*, p. 66 and Ex. 2, FP 0125.

non-hurricane losses. The MPIUA's projections are unreasonable, produce excessive rates, and should be disapproved.

## **II. THE RMS MODEL SHOULD NOT BE USED TO ESTIMATE LOSS COSTS**

The MPIUA estimates hurricane losses by averaging the results of the RMS and AIR models. Ex. 2, FP 0135. The AIR model produces a hurricane loss provision of 11.2%, the RMS model 18.9%. *Id.* The RMS model output is inconsistent with the data on the frequency and intensity of New England hurricanes, and it should not be used in this proceeding.<sup>16</sup>

### **A. The RMS Model Must Be Consistent with Historical Data on the Frequency and Intensity of New England Hurricanes<sup>17</sup>**

The ultimate objective of any hurricane model, including the RMS model, is to create a set of hurricanes with profiles consistent with the data on historical hurricanes. Tr. 8, p. 1196:19-24 (Simons). In order to correctly estimate hurricane loss costs, the frequency and intensity distributions of a hurricane model must be consistent with the historical data. Ex. 39, FP 1039:19-22 (Simons). If a model does not accurately reflect the historical data on hurricane frequency and intensity, the model should not be used to estimate loss costs:

Q. And is it also the case that if the number, the geographical location, and/or the magnitude of the hurricanes in the model do not accurately reflect the historical data on hurricanes, the hurricane model should not be used to estimate loss costs?

A. That's correct.

Tr. 8, p. 1198:16-21 (Simons).

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<sup>16</sup> The Attorney General's experts were unable to review the AIR model sufficiently to determine its utility for Massachusetts ratemaking and expressed no opinion on the consistency of the AIR model with historical data. The Attorney General's pending Motion for Sanctions based on the MPIUA's failure to comply with orders requiring the production of model information is addressed to both the AIR and RMS models.

<sup>17</sup> The RMS model must also be consistent with the geographical location of New England storms. RMS's failure to accurately model the geographical location of historical storms is an independent ground for rejecting the model. Ex. 83, p. 266.



Both Mr. Simons, the MPIUA's model expert, and Professor O'Brien, who testified for the Attorney General, agreed that the RMS model must be validated using historical New England data. Mr. Simons explicitly stated that "it is appropriate to validate the models using historical New England storm data when the model is to be used to produce Massachusetts loss costs" and defined one of the review steps as "[v]alidating that the models appropriately reflect the frequency and characteristics of hurricanes affecting Massachusetts." Ex. 39, pp. 1017:16-17, 1021:4-5 (Simons). Professor O'Brien similarly testified that "no model should be used if the hurricane frequency, intensity distribution or geographical location of the hurricanes in the model are not consistent with the historical data." Ex. 83, pp. 253-54 (O'Brien):

Q. Is the validation of a model using historical data also appropriate from a scientific perspective?

A. Yes. If the model output is inconsistent with the historical data, the model formulas and functions are not likely to be accurate predictors. While the model uses many different storm runs in its stochastic set, the model assumptions and inputs should be based on our current knowledge of the conditions and characteristics of hurricanes, and the model output should be interpreted as an estimate of the hurricane damage that may be expected to occur based on current conditions. In the absence of some indication that the historical period is unusual or that 2007-2008 is likely to be unusual, the historical data provide an unbiased estimate of the expected hurricane characteristics in 2007-2008, and any model should be validated using the historical data.

*Id.*, p. 255.

Florida meteorological standards also require validation of the model using historical data on frequency and intensity of hurricanes. Standard M-4 states that "[m]odeled probability distributions for hurricane intensity, forward speed, radii for maximum winds, and storm heading shall be consistent with historical hurricanes in the Atlantic basin" and that "[m]odeled hurricane probabilities shall reasonably reflect the Base Hurricane Storm Set used for category 1 to 5 hurricanes...." Ex. 39, Appendix A, FP 1233. The purpose of the Florida standard is to ensure that "[t]he probability of occurrence of

hurricanes should reasonably reflect the historical record with respect to intensities and geographical locations.” *Id.* The RMS model must be consistent with the historical data on frequency and intensity of New England hurricanes.

**B. MPIUA Has Not Discharged its Burden of Proving that the RMS Model Is Consistent with Historical Data on Frequency and Intensity of New England Hurricanes**

As with other aspects of the filing, the MPIUA has the burden of proving that the RMS model output is consistent with the historical data on the frequency and intensity of New England hurricanes. The MPIUA has not satisfied this burden.

1. Mr. Simons Is Not Qualified to Present Expert Testimony on Meteorological Issues

Mr. Simons, whom the MPIUA proffered as an expert witness, is not a meteorologist or climatologist. He has no degree in meteorology or climatology. Tr. 8, p. 1193:16-19 (Simons). He has no advanced training in meteorology or climatology. *Id.*, p. 1193:20-22. He has never taught these subjects. *Id.*, pp. 1193:23-1194:1. He has never published on meteorology or climatology. *Id.*, p. 1194:18-20. On the Florida Commission, a meteorological expert has responsibility to determine whether a hurricane model complies with the meteorological standards, Tr. 15, pp. 2244:3-2246:12 (O’Brien); Mr. Simons is an actuary and has no expertise in meteorology or climatology.

The MPIUA did ask a meteorologist, Jenny Evans, to attend the hearings. Tr. 15, pp. 2374, 2401; Tr. 16, p. 2412. But Ms. Evans presented no testimony and did not disagree with or rebut the testimony of Professor O’Brien.

2. Mr. Simons Did Not Analyze the Historical Data or the RMS Model Output

Mr. Simons did not review the historical data on frequency and intensity of New England hurricanes. Tr. 8, p. 1278:3-6 (Simons). He obtained no frequency and intensity

data from RMS. *Id.*, p. 1209:1-8. He did not look at the data used by RMS to obtain its distributions. Tr. 9, pp. 1335:11-14; 1374:24-1375:3 (Simons). He did not determine whether landfall probabilities in the RMS model are consistent with the HURDAT database. *Id.*, p. 1350:14-18. He performed no analysis or calculations using historical data. Tr. 8, p. 1196:5-14 (Simons).

Nor did Mr. Simons validate the model output. He did not look at the RMS calculation of New England frequencies. *Id.*, p. 1237:10-13. He did not check the RMS model values. *Id.*, p. 1254:13-17. He did not analyze RMS damage from strong hurricanes. Tr. 9, p. 1390:17-20 (Simons). He did not compare the intensity distribution of the stochastic and historical sets. *Id.*, p. 1382:12-15. He did not compare the geographical locations of the hurricanes in the RMS output and in the HURDAT database.<sup>18</sup> *Id.*, p. 1391:18-23. He did not compare the behavior of transitioning storms in the RMS output with the behavior of transitioning storms in the historical data. Tr. 8, p. 1248:5-8 (Simons); Tr. 9, p. 1416:17-22 (Simons). “I did not do any analytical analysis relative to the actual output versus the historical output over the single 106-year period that’s the historical period in those exhibits. No, I did not.” *Id.*, p. 1392:6-10.

Instead, Mr. Simons relied on a few RMS charts reproduced in his testimony:

i. RMS provided a set of 4 graphs, one referred to as “106 year (1900-2005) Historical Northeast Hurricanes” and the other three called “106 Year RMS Stochastic Samples.” Ex. 39, FP 1036. These graphs contain no indication of intensity and provide no comparison of the historical and stochastic intensity distribution. Tr. 9, p. 1383:3-6 (Simons). The graphs show, moreover, that the hurricanes in the stochastic sets are *inconsistent* with the historical set; Mr. Simons acknowledged that if the RMS stochastic set

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<sup>18</sup> HURDAT is the official government repository for hurricane data in the United States. *See infra* at p. 24.

as a whole contained the same stochastic profile as the samples—which he testified were “supposed to be random-sample representative 100-year periods”, *id.*, p. 1381:5-6—“the geographic locations of the stochastic samples would *not be consistent* with the geographic locations of the historical data....” *Id.*, p. 1385:3-13 (emphasis added). The graphs do not show that the RMS model output is consistent with the historical data; to the extent they show anything, it is the opposite—that the RMS model is inconsistent with historical data.

ii. RMS provided a “Plot of all RMS Stochastic Tacks [sic]”. Ex. 39, FP 1037 (Simons). This is a black blot that covers the eastern seaboard. Mr. Simons conceded that “you can’t tell very much about hurricane frequencies from this page....” Tr. 9, p. 1385:17-23 (Simons).

iii. RMS provided a bar graph that compares historical and model frequency for each Saffir-Simpson category 1-5. Ex. 39, FP 1038. This graph (also discussed below) shows that the RMS model frequency for categories 4 and 5 hurricanes, about 0.135, is *inconsistent* with the historical frequency for these categories, which is 0.

Mr. Simons performed no independent analysis, and the graphs provided by RMS show that the model output is inconsistent with the historical data on New England hurricanes.

### 3. Mr. Simons’ Testimony Should Be Given No Weight

Mr. Simons refused to answer several key questions concerning the RMS model. He was asked “to tell us how RMS uses historical data to produce the frequency in the model” and responded: “I’m refusing to tell you that information which I have been given as proprietary, yes.” Tr. 8, p. 1230:15-19 (Simons). He later made clear that “[i]t’s just

when you get down to the level of how this is actually done, this is where the proprietary information is.” Tr. 9, pp. 1357:23-1358:1 (Simons).

Cross-examination is required by statute and regulation, and witnesses have an obligation to respond to questions seeking relevant information on material issues in the filing. Neither RMS, which was represented at the hearing, nor Mr. Simons’ counsel objected to the testimony concerning its model; Mr. Simons raised this objection himself based on an agreement he claims to have entered into (he stated, first, that he “signed an agreement with the State of Florida or signed an agreement with RMS or with AIR or whoever is back there” and subsequently that it was “an agreement between the Florida commission and me”). Tr. 8, pp. 1230:9-11, 1231:12-13. A witness should not be permitted to pick and choose the questions he wishes to answer. The testimony of a witness who refuses to answer key questions should be given no weight.<sup>19</sup>

Mr. Simons’s testimony should be given no weight for a second reason: it is based on inaccurate information. Mr. Simons relied on information from the modelers that a category 5 hurricane made landfall in New Jersey during the historical period.

Q. When was the Cat 5 in New Jersey, Mr. Simons?

A. I don’t remember, sir.

Q. Are you testifying there was one?

A. I’m testifying that there was one measured by either central pressure or wind speed by one of the modelers, and it was shown to me, and *it was shown to be a valid assumption*.

Tr. 8, p. 1219:12-19 (emphasis added). Mr. Simons is mistaken. No category 5 hurricane has ever made landfall north of southern Florida. Ex. 104.

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<sup>19</sup> The Attorney General moved to strike Mr. Simons’s testimony on several occasions; the Hearing Officers indicated that they would consider the issue of Mr. Simons’s obstruction on the question of weight. *E.g.*, Tr. 8, pp. 1230-33 (Simons).

Mr. Simons did not check any of the information provided to him by the modelers. Tr. 8, pp. 1196, 1209, 1214-15, 1218, 1237, 1255, 1256, 1278; Tr. 9, pp. 1335, 1350, 1374-75, 1382, 1390, 1391, 1392, 1416 (Simons). He refused to answer questions and relied on misinformation received from the modelers. His testimony should be given no weight.

**C. The RMS Model Is Inconsistent with the Historical Data on the Frequency and Intensity of New England Hurricanes**

Dr. James O'Brien, for 35 years until his retirement in 2006 Professor of Meteorology and Oceanography at Florida State University, Ex. 83, p. 253 (O'Brien), reviewed the meteorological aspects of the RMS model. Professor O'Brien has authored 200 scientific publications on meteorology and is an expert on hurricanes. *Id.* In 1999, he was appointed State of Florida climatologist and during the same year began serving on the Florida Commission on Hurricane Loss Projection Methodology as the Florida Commission's expert on meteorology. *Id.*

Professor O'Brien described the method that must be used to validate the RMS model:

Q. Please explain what it means to validate a model using historical data.

A. To validate a model using historical data means to ensure that the output of the model is consistent with the historical data. The validation is basically a two step process. First, the relevant historical data must be obtained, examined, and summarized. Second, the model output must be summarized, analyzed, and compared with the historical data.

Ex. 83, p. 255 (O'Brien).

**1. The RMS Model Was Not Validated in Florida for Use in New England**

The frequency and intensity distributions of New England hurricanes in the RMS model were not validated by the Florida Commission. The Florida Commission reviews

hurricane models in order to determine whether they are “sufficiently accurate and reliable for projecting hurricane loss costs for residential property in Florida.”<sup>20</sup>

While the Florida review may have validated the model based on historical storms in Florida, these historical storms are not the same as the storms that affected Massachusetts. The Florida Commission has never reviewed the New England storm data or attempted to validate the frequency and intensity distribution of the modeled storms or the geographical reach of modeled transitioning storms against the New England storm data. When the Florida Commission approves models, it does so for the projection of hurricane losses in Florida, not in Massachusetts or any other state.

*Id.*, p. 256. The Florida Commission never reviewed historical data on New England hurricanes, never looked at RMS model statistical techniques<sup>21</sup> in connection with New England hurricanes, and never looked at the RMS model output for New England. Tr. 17, pp. 2606:12-2608:9 (O’Brien). The Florida Commission did not validate the RMS model for use in New England:

Q. From the meteorological standpoint, is it your opinion that the Florida Commission’s review was sufficient or insufficient to determine whether the RMS model is appropriate for use in predicting hurricane losses in New England?...

A. Oh, completely insufficient. The character of hurricanes in New England is considerably different than the character of hurricanes in more southern latitudes.

Q. And that’s never been looked at in Florida.

A. Not to my knowledge.

Tr. 17, p. 2608:10-24 (O’Brien).

Review of the RMS model for use in Massachusetts requires a determination that the frequency and intensity distributions of the model are consistent with the historical data on hurricanes in New England. This analysis, which Professor O’Brien performed here, was never performed in Florida. Tr. 17, pp. 2591:9-11, 2609:1-13 (O’Brien).

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<sup>20</sup> Ex. 65, p. 187 (Schwartz), *quoting from* Florida Commission on Hurricane Loss Projection Methodology, “Report of Activities as of November 1, 2005,” page 42.

<sup>21</sup> The Florida Commission did not make specific findings approving statistical techniques within the RMS model, but validated the model’s frequency and intensity distribution based on Florida data. Tr. 17, p. 2605:1-11 (O’Brien).

2. The RMS Model Is Inconsistent with the HURDAT Data on the Frequency and Intensity of New England Hurricanes

a. *The RMS Model Frequency and Intensity Distribution.* In the RMS model, 10% of the hurricanes and nearly half the damage are from category 4 and 5 hurricanes:

For hurricanes that made landfall in New England in the RMS model, nearly half the losses are from storms of Saffir-Simpson categories 4 and 5, 36% in category 4 and 6% in category 5, or 42% of losses from New England hurricanes in categories 4 and 5. The frequency of category 4 and 5 hurricanes in the RMS model is about .014.

Ex. 83, pp. 10 (O'Brien), 262, Internal Exhibit H. Category 3 storms account for another 26% of the hurricanes and 35% of the damage.<sup>22</sup> *Id.* Both the frequency and loss distributions in the RMS model are heavily weighted toward the most intense hurricanes.

b. *The RMS Model Is Inconsistent with New England HURDAT Data.* HURDAT "is the official record of tropical storms and hurricanes for the Atlantic Ocean, Gulf of Mexico and Caribbean Sea, including those that have made landfall in the United States." Ex. 39, FP 990 (Simons). RMS used HURDAT data to create the frequency and intensity characteristics of its model. Tr. 8, p. 1199:10-19 (Simons).

Professor O'Brien used the HURDAT data to plot the path of each New England (New Jersey through Maine) hurricane and to determine the windspeed at each point on the path. The analysis of paths and windspeeds is necessary because hurricanes have different windspeeds at different locations. *Id.*, p. 259. Professor O'Brien found that, based on

| <sup>22</sup> New England + NJ<br>Maximum Category | Loss Distribution | Annual Rate | Annual Rate<br>Distribution |
|--|-------------------|-------------|-----------------------------|
| 1  | 8%                | .055        | 39%                         |
| 2  | 15%               | .034        | 25%                         |
| 3  | 35%               | .036        | 26%                         |
| 4  | 36%               | .013        | 9%                          |
| 5  | 6%                | .0005       | 0%                          |
| Total  | 100%              | .139        | 100%                        |

Ex. 83, Internal Exhibit H. These values were taken from the model output. RMS provided a summary chart that it claimed contained the model output; the results were similar but understated the frequency. Ex. 87.



HURDAT paths and windspeeds, no category 3, 4, or 5 hurricane affected New England from 1900 through 2006:

In my analysis of the windspeeds in the official HURDAT set, I found that at New England landfall, there were no hurricanes of Saffir-Simpson category 3 or higher. All hurricanes making landfall in New England since 1900 had windspeeds that placed them in Saffir-Simpson categories 1 and 2 (there were a number of tropical storms and depressions, which are not considered hurricanes).

*Id.*, p. 259.<sup>23</sup>

The HURDAT database also contains summary descriptions “which are not tied to specific times or locations and which may in some cases be judgmental or not based on data.” *Id.*, p. 258. Professor O’Brien’s review of these designations in HURDAT found that no category 4 or 5 hurricane affected New England between 1850 and 2006. *Id.*<sup>24</sup>

HURDAT data, both windspeed and summary, show that no category 4 or 5 hurricane has ever affected New England. RMS acknowledges that the historical frequencies of category 4 and 5 storms in New England are 0 and 0. Ex. 87. Professor O’Brien examined *all category 4 and 5 hurricanes* in the HURDAT database and found that no category 4 hurricane has been observed north of South Carolina, and no category 5

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<sup>23</sup> A category 3 hurricane made landfall in New England in 1869. Ex. 83, p. 263 (O’Brien).

<sup>24</sup> Using the summary designations in the HURDAT database, the total number of hurricanes does not change, but the intensity distribution of categories 1, 2, and 3, which in the windspeed analysis was .065, .056, and 0, becomes .056, .019, and .047 respectively. *Id.* Florida standards, however, require historical hurricane strength to be based on windspeed, Tr. 17, pp. 2615-16 (O’Brien), and the summary designations are based on other data or no data. Ex. 83, p. 258. While Professor O’Brien has not expressed a view as to the correctness of the summary designations, he noted that according to the latitude, longitude, and windspeed data in HURDAT,

--the 1938 hurricane was last a category 3 off the coast of North Carolina, and became a category 2 hurricane around Chesapeake Bay,

--the 1944 hurricane was last a category 3 hurricane off the coast of Georgia and became a category 2 hurricane off South Carolina,

--Hurricane Edna was last a category 3 hurricane off the coast of North Carolina and became a category 2 hurricane off the coast of Maryland, and

--Hurricane Gloria was last a category 3 hurricane around Nassau in the Bahamas, and became a category 2 hurricane near Fort Myers Florida. *Id.*, pp. 259-60.

All these hurricanes were given summary designations as category 3 hurricanes in the HURDAT set. *Id.*

hurricane has been observed north of southern Florida. Ex. 104; Tr. 17, p. 2628.<sup>25</sup> The highest windspeed contained in the HURDAT database for a New England hurricane is at the low end of category 3, and this occurred once, in 1869; all other New England windspeeds in HURDAT were in category 2 and below.

The 156 year HURDAT database contains no category 4 or 5 hurricane making landfall in New England. The highest windspeed at landfall in the HURDAT database of any New England hurricane was 115 mph, which is at the low end of category 3 (111-130 mph); this was the hurricane of 1869. Since 1869, there are only a handful of examples of New England landfall windspeeds as high 100 mph, which is on the low side for category 2. No windspeed at landfall in New England in the HURDAT database even approaches the category 4 level of 131 mph.

Ex. 83, p. 263 (O'Brien).

The absence of category 4 and 5 hurricanes in New England is not a random result but is based on meteorological factors. “These include the cold ocean temperatures and vertical wind sheer. As storms move northward and near land, they lose the tropical heat engine needed to produce the strongest hurricanes.” *Id.*, p. 264. Category 4 and 5 hurricanes have not affected New England historically because meteorological factors prevent such hurricanes from affecting New England. *Id.*

RMS data show that in the RMS model category 4 and 5 storms represent about *the same portion of the modeled storms in New England and in Florida*—10% in New England, Ex. 83, Internal Exhibit H, and 12% in Florida, Ex. 89, p. 84—notwithstanding the fact that no category 4 or 5 storm has ever come anywhere near New England. The RMS model is inconsistent with historical data:

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<sup>25</sup> Category 4 and 5 hurricanes have occurred in Florida, and it may be reasonable, therefore, for the modeled results to include damage from category 4 and 5 hurricanes in Florida. Ex. 89, p. 76. Within Florida, category 4 and 5 hurricanes have occurred in each Florida region or in the regions directly contiguous to such regions. In New England, by contrast, no category 4 or 5 hurricane has occurred in any state between New Jersey and Maine or in any region within these states. Nor has any category 4 or 5 hurricane occurred in any state contiguous to any of the states between New Jersey and Maine or, indeed, within hundreds of miles of any of these states.

Q. Are these values consistent with the historical data?

A. No. There are no hurricanes of Saffir-Simpson categories 4 or 5 making landfall in New England in the entire HURDAT data set, which spans 156 years. The RMS model, by contrast, shows that two hurricanes of category 4 should have occurred within the HURDAT data period. Similarly, the amount of damage from category 4 and 5 hurricanes making landfall in New England in the last 156 years is \$0. In the RMS model, about half the hurricane losses come from hurricanes that are absent from the historical record. While there may be a small probability that a category 4 hurricane may make landfall in New England in 2008, the frequency of category 4 and 5 hurricanes in the RMS model is inconsistent with the HURDAT data.

Ex. 83, p. 263 (O'Brien).<sup>26</sup>

In the RMS model, category 4 and 5 storms cause damage as high as \$12 billion (category 5) and \$7 billion (category 4), vastly higher than the RMS model's estimate of the damage resulting from the 1938 storm. Ex. 65, pp. 224-34. "The overstatement of frequency and the discrepancy between the intensity distribution in the HURDAT data and in the model thus has a material effect on the model output, greatly increasing the modeled losses over historical baselines." Ex. 83, p. 263.

Because RMS refused to provide materials concerning its calculation of the frequency and intensity distribution, Professor O'Brien was unable to determine what aspect of the model produces the inconsistency between its results and the historical data.

Q. Did you check the RMS frequency and intensity formulas and calculations to determine why the RMS frequency and intensity distribution of New England hurricanes are inconsistent with the HURDAT data?

A. No. The Office of the Attorney General asked RMS to provide the data, the formulas, and calculations that produced the model frequency and intensity distribution. I reviewed RMS's response to this request, and RMS did not provide the requested information.

*Id.*, p. 264.<sup>27</sup>

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<sup>26</sup> "The RMS model intensity distribution is even more aberrant when compared to the HURDAT distribution based on windspeed, which shows an overall frequency of .121 and an intensity distribution that is limited to category 1 and 2 storms, with no category 3, 4 or 5 hurricanes since 1900. In the RMS model, by contrast, 77% of the damage from hurricanes making landfall in New England comes from storms in categories 3, 4, and 5, storms that, based on HURDAT windspeeds, are absent from the historical record of New England hurricanes." *Id.*

Professor O'Brien found that it is not reasonable to use the RMS model's output for determining hurricane losses in Massachusetts. "The RMS model should not be used until the frequency and intensity distribution in the model are validated using the historical data on New England hurricanes in the official HURDAT set." *Id.* Professor O'Brien's analysis and opinion were not rebutted. The RMS model should not be used.

*c. The RMS Model Is Inconsistent with New England Geological Data.* Data from 700 years of storms in New England show "an annual probability for intense hurricane landfall of about 0.9%." Ex. 99, p. 87. The RMS model's annual probability for intense hurricanes is 4.6%, about five times higher. Tr. 17, p. 2631:2-6 (O'Brien). Based on the geological data, the model overstates the frequency of intense storms by about 400%. *Id.*

Professor O'Brien testified that "the strong storms being discovered by the paleo workers along the United States coast have to be Category 3 and can't be stronger." *Id.*, pp. 2631:23-2632:3. In the RMS model, by contrast, about a third of the category 3, 4 and 5 storms are in categories 4 and 5. Ex. 83, Internal Exhibit H; indeed, the RMS frequency of category 4 and 5 storms alone is considerably higher than the frequency of *all* category 3, 4, and 5 hurricanes in the geological data. *Id.* RMS not only overestimates the frequency of strong storms, but it also skews the distribution by placing a significant portion of the storms in categories above category 3 when in the geological data, as in HURDAT, there are no such storms in New England. The RMS model is inconsistent with the geological data on New England hurricanes.

*d. The RMS Model Is Inconsistent with RMS Transition Storm Data.* RMS analyzed historical data on transitioning storms, which are New England storms, Tr. 17, p.

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<sup>27</sup> Nor was Professor O'Brien able to re-run the model using frequency and intensity distributions consistent with the historical data. *Id.*

2622:19-21 (O'Brien), and found that of 101 transitioning and transitioned storms, 1 was a category 3 storm, and 100 were category 2 and below. Ex. 103.<sup>28</sup> There are no storms above category 3. *Id.*

In RMS's own analysis of transition storm data, 0% of the storms were in categories 4 and 5, 1% in category 3, and 99% in categories below 3. *Id.* In RMS's model, by contrast, 36% of the New England storms are category 3 and higher. Ex. 83, Internal Exhibit H. The frequency and intensity distribution in RMS's model is inconsistent with RMS's own analysis of New England storms.

*e. The RMS Model Is Inconsistent with the HURISK Program's Estimate.* MPIUA placed in the record the results of a model known as the National Hurricane Center Risk Analysis Program (HURISK). Ex. 106. While examining the results of another model does not validate the RMS model using historical New England data—and thus does not comply with the Florida standard — for both category 3 and 4 storms, the HURISK estimates are *inconsistent* with the RMS model's estimates:<sup>29</sup>

Q. If we thought about [the category 3 return period] as an average of this entire geographical area, would one to about one and a half be right?

A. Yes.

Q. And if we look at the RMS modeled frequency for category 3 hurricanes on Exhibit 87, the value that appears on Page 21083 is 3.3 hurricanes per every 100 years. Do you see that?

A. Yes.

Q. And would you view that as consistent or inconsistent with the material that you see on Exhibit 106?

A. It seems to be somewhat inconsistent.

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<sup>28</sup> See chart entitled Max Sustained Winds vs. Central Pressure. The numbers were obtained by counting the data points on the chart.

<sup>29</sup> Professor O'Brien also testified that he disagreed with the estimates produced by the HURISK model "based on the scientific record." Tr. 17, pp. 2687:16-2690:17 (O'Brien).

Q. And similarly, the RMS model's frequency for Category 4 is 1.3 hurricanes for every 100 years on Exhibit 87. Do you see that?

A. Yes.

Q. Would you view that as also inconsistent with the material on Category 4 hurricanes that appears in Exhibit 106?

A. I would.

Tr. 17, pp. 2694:12-2695:8 (O'Brien).

A second independent model estimated probabilities of 0.15%-0.81% for category 3 winds, substantially lower than RMS' estimate of 3.3% for category 3 storms and 5% for storms of category 3 and higher. Ex. 99, p. 87. Other models do not support RMS.

*f. Summary.* The RMS model is inconsistent with the historical data on the frequency and intensity of New England hurricanes. It is inconsistent with geological data on New England storms. It is inconsistent with RMS's own analysis of the historical data of transitioned and transitioning storms. It is inconsistent with the output of other models. The MPIUA did not rebut Professor O'Brien's analysis of the frequency and intensity distribution of New England hurricanes. The hurricane loss portion of the MPIUA filing produces excessive rates and should be disapproved.

### **III. THE NET COST OF REINSURANCE IN MPIUA'S RATES IS UNREASONABLE AND EXCESSIVE**

The MPIUA filing includes a load for the net cost of reinsurance of 22.9% of premium (44.1% for Territory 37). Ex. 2A, FP 0142. The indicated marginal rate change due to reinsurance is 26.7% (51.4% for Territory 37). *Id.*, FP 0056. Absent the net cost of reinsurance in the filing, the proposed rate change would be substantially negative.

*The MPIUA's Purchase of Reinsurance.* The MPIUA purchased \$80 million of reinsurance, which represents about 40% of the entire FAIR Plan premium earned in 2006.

Ex. 65, p. 13.<sup>30</sup> The Board decided to buy \$80 million in reinsurance for the purpose of raising FAIR Plan rates above voluntary market rates:

Q. So was the purpose of the \$80 million purchase to get FAIR Plan rates above voluntary market rates?

A. Yes.

*Id.*, p. 300:14-17. The FAIR Plan raised rates to eliminate competition. There is no justification for inflating rates simply to match those of the FAIR Plan member-insurers.

*The net cost of reinsurance.* The total or gross cost of reinsurance is composed of two parts, the expected hurricane loss recovery to the MPIUA and the retention (largely profit) of the reinsurer. In the reinsurance transaction, MPIUA gives a portion of the hurricane load to the reinsurer and expects to receive back this same portion: “they’re getting money back from the reinsurer that they’ve already paid....” Tr. 4, p. 592:14-22 (Ericksen).

Because the filing already charges policyholders for the hurricane losses in the estimated hurricane loss provision—and the hurricane loss provision in rates is intended to be sufficient to pay expected hurricane losses, Tr. 4, pp. 587:18-588:8 (Ericksen)—the expected hurricane loss recovery from reinsurance is excluded from the filing. Only the second element of the gross cost of reinsurance, the reinsurer’s retention, comprised of the reinsurer’s profit and expense, is contained in the filing. Ex. 9, FP 0946 (Ericksen). This is referred to as the “net cost of reinsurance.” *Id.*

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<sup>30</sup> The \$80 million amount was set by the Board without input from any other source, Tr. 3, p. 303:7-11 (Golembeski). Prior to settling on the \$80 million figure, the Board received no information showing that the MPIUA’s prior reinsurance program provided inadequate coverage, *id.*, p. 301:19-23, failed to review the expected losses covered by the reinsurance, *id.*, p. 303:12-20, did not examine the price of reinsurance, *id.*, p. 305:11-15, and obtained no information on the advantages and disadvantages of the \$80 million purchase. *Id.*, p. 310:12-16.

In its filing, the MPIUA calculates the “net cost of reinsurance” as about 90% of the cost of reinsurance. Ex. 2A, FP 0139. This means that for every \$1 paid to the reinsurer, the filing allocates 90 cents to the reinsurer as profit and expense, and 10 cents to the MPIUA to cover its hurricane losses. Tr. 4, pp. 594:18-595:1 (Ericksen). In the filing, the reinsurer’s profit and expense on the MPIUA’s reinsurance are 50% higher than the *total amount of the hurricane losses* expected to be incurred by the MPIUA in 2008, Tr. 4, p. 617:4-8 (Ericksen). It is advantageous to the MPIUA to reduce the expected loss recovery from reinsurance and to increase the reinsurers’ profit and expense because the latter, and not the former, is included in rates. As a result, the MPIUA claims it is paying about \$72 million—or 22.9% of 2008 premium—to obtain \$8 million—or about 2%—in reinsurance coverage.

The net cost of reinsurance in the MPIUA’s filing is unsupported and incorrect. It produces excessive rates and should be disapproved.

**A. The MPIUA Has Not Satisfied Its Burden of Showing that the Net Cost of Reinsurance In the Filing Is Accurate and Reasonable**

**1. The Reinsurers’ Profit and Expenses Are Not Contained in the Filing**

The MPIUA’s witnesses testified that “the net cost of reinsurance can be interpreted as the reinsurer’s anticipated profit and expenses.” Ex. 9, FP 0946:3-5 (Ericksen). Actuarial standards require that “[t]o the extent possible, the loading should represent that *actually used by the reinsurer* in the treaty.” Ex. 60, p. 233 (emphasis added). The net cost of reinsurance is “what the reinsurer used to calculate the premium.” Tr. 13, p. 2054:5-6 (Schwartz).



The reinsurer's profit and expense are not contained in the MPIUA filing. Ex. 65, pp. 179-80 (Schwartz). Neither the MPIUA nor its experts even attempted to obtain these values.<sup>31</sup>

Q. During the course of the negotiations that dealt with the MPIUA's reinsurance program, did you ask the reinsurers to calculate for you the expected losses under the MPIUA's program?

A. I don't recall specifically asking them to do that.

Q. What about in preparation for your testimony today? Did you or anyone at Guy Carpenter go to the reinsurers and ask them to calculate the expected losses under the MPIUA's 2007 reinsurance program?

A. We did not specifically ask that they would do that, that I'm aware of....

Q. In any case, you didn't attempt to inquire of any of the reinsurers what the expense components of the rates were?

A. That's correct, not to my knowledge....

Q. In preparation for your testimony here, did you go to a reinsurer and say, 'What was the profit or risk load in the MPIUA's 2007 reinsurance program?'

A. I did not.

Tr. 6, pp. 783:18-784:6, 787:20-23, 789:7-11 (Wackerman).

Q... Can you tell us in dollars the total amount of MPIUA's losses that National Indemnity calculated as the amount it expected to pay in 2007?

A. I don't—I'm not familiar with the National Indemnity calculations.

Q. So if I asked you the same questions about the percentage of losses—loss as a percentage of reinsurance premium, the expenses, the profit, and so forth, would you not be able to tell me how National Indemnity calculated those values?

A. I would not.

Tr. 7, p. 959:11-21 (Leimkuhler).

Q. Did you attempt to obtain that information [on reinsurers' expense and profit] from anybody?

A. I have not.

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<sup>31</sup> The MPIUA also opposed efforts of the Attorney General to subpoena these values from the reinsurers; the Hearing Officers declined to issue the subpoenas.

Tr. 4, pp. 596:22-597:10 (Ericksen).

It is the MPIUA's burden to provide the values needed to determine the reinsurer's profit and expense. The MPIUA has omitted this information from its filing, has not sought to obtain this information, and has opposed access to the information. It has not satisfied its burden.

2. The Net Cost of Reinsurance in the Filing is Incorrect and Excessive

The testimony of MPIUA's witnesses demonstrates that the net cost of reinsurance in the filing is inaccurate and excessive. The MPIUA's witnesses stated that the RMS short-term model was likely used to calculate the reinsured hurricane losses and testified that the RMS short-term model produces a substantially higher estimate of covered losses than the average of the AIR and RMS long-term models used by the MPIUA to "back out" the net cost of reinsurance. Tr. 7, p. 961:3-17 (Leimkuhler). *See also* Ex. 65, p. 180 (Schwartz) ("The RMS model used alone gives projected losses much higher than the average of the RMS and AIR models. In addition, the RMS short - term model gives projected losses considerably in excess of the RMS long – term model."). The reinsurers' actual profit and expenses are thus lower than the net cost of reinsurance in the filing:

A. I think it's likely that they used the short-term models.

Q. And it is generally the case, is it not, that the short-term models produce higher expected loss values than the models—the historical models?

A. That's correct.

Q. And the net cost of reinsurance calculated using a short-term model would be less than the net cost of reinsurance using the historical models?

A. The net cost of using the—the net cost using the short-term would be lower; is that what you are saying?

Q. That's correct.

A. I think that's the case.

Tr. 7, p. 961:3-17 (Leimkuhler).

The net reinsurance cost in the filing is higher than the reinsurer's profit and expense. The net cost of reinsurance is incorrect and excessive.

**B. The Net Cost of Reinsurance in the Filing Unreasonably Requires Policyholders to Pay Short-Term Modeled Hurricane Losses in Excess of the Losses in the Filing**

The RMS short-term model has not been accepted by the Florida Commission. Ex. 65, p. 182 (Schwartz). The MPIUA explicitly stated that short-term model losses should not be used for ratemaking purposes:

Q. You state in your testimony that you do not believe that near-term losses should be used for ratemaking purposes.

A. Yes.

Q. Why, in your view, are near term losses inappropriate for ratemaking purposes?

A. It would appear that the near term is much more severe. It anticipates a frequency issue and more severity, as I understand those near-term models.

Tr. 3, p. 285:11-20 (Golembeski).

The net cost of reinsurance, however, includes precisely these losses. In addition to the profit and expense of the reinsurers, the gross cost of reinsurance contains an estimate of reinsured losses based on the RMS short-term model. Ex. 65, p. 181 (Schwartz). To obtain the net cost of reinsurance, the MPIUA removes from the gross cost a loss estimate based on the average of the long-term AIR and RMS models; this procedure leaves within the net cost of reinsurance *that portion of the RMS short-term model's loss estimate that exceeds the average of the long-term AIR and RMS estimates. Id.* The sum of this excess portion of the net cost of reinsurance and of the hurricane loss provision in the filing is precisely the RMS short-term model's estimate of MPIUA hurricane losses.

First, the net cost of reinsurance value included in the MPIUA filing represents more than a reasonable loading for reinsurance company profit and expenses. The net cost of reinsurance included in MPIUA's proposed rate comprises the reinsurers' profit and expense load... and the additional loss costs the reinsurers include in the reinsurance premium.... Policyholders are already paying 100% of the hurricane loss costs based upon the methodology the Commissioner of Insurance accepted in the previous MPIUA rate filing. These hurricane losses are contained in the hurricane load in the MPIUA's filing. The net cost of reinsurance should not include additional projected hurricane loss payments.

Second, the MPIUA's calculation of the net cost of reinsurance demonstrates that the MPIUA is seeking to have policyholders pay hurricane losses over and above the hurricane loss costs based on the long term models. These losses... are based on the RMS short-term model (plus other possible add-ons). The RMS short-term model has been rejected by the Florida Commission, and has never been approved by regulators anywhere. The MPIUA has stated in this proceeding that it does not seek to charge policyholders for hurricane losses based on the RMS short-term model. However, the net cost of reinsurance charge in the MPIUA filing is simply a back-door or indirect means of placing the short-term modeled loss costs in the rate. This is particularly unreasonable since these loss costs are not quantified in the filing and have never been subject to examination in the proceeding. In addition, according to the testimony of MPIUA's witnesses, the loss costs... include amounts added on by the reinsurers to the modeled losses that are only vaguely described and, like the short term RMS model losses, are not quantified and have not been subject to analysis.

Ex. 65, p. 182 (Schwartz).

The MPIUA did not disagree with or rebut Mr. Schwartz's testimony. The MPIUA should not be permitted to charge policyholders for hurricane losses that are based on a discredited model and that have not been quantified in the filing. The net reinsurance cost in the filing is unreasonable and produces excessive rates.

### **C. Reinsurance Data Show that MPIUA's Filed Net Cost of Reinsurance Is Inaccurate**

The MPIUA assumes in its filing a reinsurance loss ratio of 11.8%. Ex. 65, p. 170 (Schwartz). But regulatory filings by the reinsurers show that since 2000, the average loss ratio for reinsurance is 73%. *Id.*, pp. 169-70. Loss ratios in a report authored by Guy Carpenter, MPIUA's broker, are similar: 73.1% on average. *Id.*, p. 170. National Indemnity, MPIUA's lead reinsurer, has an average loss ratio of 78.7% and a median loss

ratio of 36.7% over the past 10 years. *Id.*, p. 171. The 11.8% loss ratio assumed by the MPIUA in its filing is unreasonable and inconsistent with data on reinsurance loss ratios.

Ten MPIUA members were ordered to produce information on their reinsurance programs in this proceeding.<sup>32</sup> The members' data show that the reinsurance loss ratios of companies in the voluntary market are between 68.6% and 186% higher than the reinsurance loss ratio in the MPIUA's filing. *Id.*, p. 200. For insurers whom the MPIUA agreed to identify as Primarily Cape Insurers, the reinsurance loss ratios are 155.2% and 186.4% higher than the reinsurance loss ratio in the filing. *Id.*<sup>33</sup>

The MPIUA did not rebut or disagree with any of this data, nor did its experts have any explanation for the substantial excess in the net cost of its reinsurance and the similarly substantial shortfall in loss payments the MPIUA expects to receive. A reinsurance loss ratio consistent with the reinsurers' data would substantially reduce the net cost of reinsurance in the filing. The MPIUA's net cost of reinsurance is unreasonable and produces excessive rates.

#### **D. MPIUA Incorrectly Implements its Filed Net Cost of Reinsurance**

In its implementation of the net cost of reinsurance, the MPIUA begins with a net cost of reinsurance of about \$70.5 million, which represents 88.5% of its \$80 million gross cost of reinsurance. *Id.*, p. 172. Of this amount, the MPIUA allocates 91.5%, or about

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<sup>32</sup> Many of the companies refused to produce the information. Travelers, Liberty Mutual, Chubb and Arbella did not produce information concerning their rates on line, and these companies, together with Quincy Mutual, did not produce information on their reinsurance loss ratios. The companies' refusal is the subject of the Attorney General's motion for sanctions, which is pending.

<sup>33</sup> The MPIUA's rate on line, a measure of the cost of reinsurance per unit coverage, is 34% and 67% higher than the rates on line of MPIUA members. *Id.*, p. 199. This is so even though, according to the MPIUA's expert, reinsurance for the voluntary and residual markets is priced in the same way. Tr. 7, p. 931 (Leimkuhler). Hence, the MPIUA is paying more for reinsurance than voluntary market companies, as indicated by the higher rate on line. Furthermore, the MPIUA is getting back a lower return of the premiums paid than voluntary market companies, as indicated by the lower projected loss & LAE ratio. Ex. 65, p. 169 (Schwartz).

\$64.5 million, to its homeowner insurance customers' rates.<sup>34</sup> *Id.* This value is then assigned to territory. As a percent of premium, the 44.1% amount assigned to Territory 37 is about twice as high as the average statewide reinsurance cost and about four times as high as the average of all other territories. *Id.*

The 22.9% statewide net cost of reinsurance is a weighted average of the reinsurance percentages assigned to territory based on the December 31, 2005 exposure distribution. *Id.* The filing then assumes that all territories' premiums will grow at the same rate between December 31, 2005 and the policy period so that, during the policy period, the MPIUA will still collect the 22.9% net cost of reinsurance in the filing. *Id.*

This assumption is incorrect. Between December 31, 2005 and December 31, 2006, the period during which MPIUA is assuming uniform growth, Territory 37 exposures grew at a much higher rate than the remainder of the FAIR Plan territories. *Id.*, pp. 172-73. Because Territory 37 has a substantially higher reinsurance load than the other territories, and because its premium is growing faster than the premium of other territories, during the policy year the MPIUA will collect much more than the 22.9% net cost of reinsurance in the filing. *Id.*, p. 172.

[T]he MPIUA allocates about 64% of the net cost of reinsurance for the homeowners owners form to territory 37. The MPIUA calculation of the net cost of reinsurance is based upon the assumption that the rate of growth in exposures across all territories is the same. However, territory 37 has been growing much faster than the rest of the Massachusetts – more than 50% faster. The high rate of growth of exposures for territory 37 combined with the large amount of reinsurance costs that the MPIUA allocates to territory 37 results in the projected reinsurance charge to policyholders that is built into the indicated rates being higher than the amount the MPIUA actually claims it needs.

*Id.*, p. 173. The assumption of uniform growth, which is inconsistent with the data, produces a substantially excessive net cost of reinsurance.

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<sup>34</sup> MPIUA also provides insurance for rental and commercial properties.

Based upon how the MPIUA loads reinsurance into the rates, and given the growth in exposures by territory, the MPIUA is loading into the homeowners insurance owners form rates a provision for reinsurance of \$73,426,167, which is 13.8% more than the \$64,530.057 the MPIUA claims that it needs to cover the cost of reinsurance for the homeowners insurance owners forms (see Schedule AIS-8). *Id.*, p. 172.

The MPIUA did not disagree with or rebut the Attorney General's analysis. The MPIUA's net cost of reinsurance is incorrect and produces excessive rates.

**E. MPIUA's Net Cost of Reinsurance Should Be Disapproved, or, in the Alternative, the Attorney General's Expert's Calculation of the Net Cost of Reinsurance Should Be Used**

Because the MPIUA has not met its burden, the MPIUA net cost of reinsurance should be disapproved. The MPIUA should not be permitted to charge for reinsurance.

While it is not the Attorney General's burden to propose an alternative reinsurance cost, the Attorney General's expert calculated a net cost of reinsurance that he testified was reasonable for ratemaking. Tr. 13, p. 1936:7-9 (Schwartz). This cost assumes the expected reinsurance recovery in the MPIUA's filing,<sup>35</sup> about 2% of premium, and obtains reinsurers' profit and expense based on actual data from reinsurers. Ex. 65, pp. 167, 193-96. The calculation is based on "a reasonable premium and reasonable expected recoveries to give a reasonable net cost of reinsurance." Tr. 13, p. 1952:7-10 (Schwartz).<sup>36</sup>

The Attorney General's expert did not attempt to place the reinsurance for the MPIUA, nor did he attempt to determine whether the rate on line was available. *Id.*, pp. 1943:5-6, 1954:17-1955:9.<sup>37</sup> The purpose of the calculation was simply to obtain—in the absence of information about the reinsurers' actual profit and expense, and in light of the

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<sup>35</sup> In light of Professor O'Brien's conclusion that the RMS model should not be used, the calculation uses the AIR model only. Tr. 13, p. 1942:2-4 (Schwartz).

<sup>36</sup> The method is virtually identical to the method used to calculate the net cost of reinsurance in Exhibit 60. Tr. 13, pp. 1944, 2053-54 (Schwartz).

<sup>37</sup> The rate on line implied by the calculation, 1.6, is similar to the rate on line in Exhibit 69, 3.5. Ex. 69. Use of the rate on line in Exhibit 69 would alone lower the net cost of reinsurance in MPIUA's filing by 60%. Tr. 13, pp. 2048:18-2049:8 (Schwartz).

incorrect and unreasonable values in the MPIUA filing—a reasonable cost of reinsurance for rate-making purposes. *Id.*, p. 1936:7-9. This is the same analysis performed for the Florida Office of Insurance Regulation, where the key question is “whether the amount that companies are included in the filings for the net cost of reinsurance is reasonable.” *Id.*, p. 2037:13-24. The calculation produced a gross cost of reinsurance of about 6% of premium, and a net cost of reinsurance of 3.7%. Ex. 65, p. 167.

The reinsurance cost in the filing is unsupported and incorrect, and, as a result, MPIUA’s rates are unreasonable and excessive.

### **Conclusion**

The MPIUA’s filing (1) substantially over-predicts non-hurricane losses by using an inflation-only trend and ignoring the improved risk and loss reductions in Territory 37, (2) overstates hurricane losses by using the RMS model, which is inconsistent with data on the frequency and intensity of New England hurricanes, and (3) includes a reinsurance charge that is unsupported, incorrect, and requires policyholders to pay losses based on RMS’s discredited short-term model. The filing should be disapproved.

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