Axene Health Partners, LLC
Health Actuaries \& Consultants

# www.axenehp.com 

September 17, 2010
Mr. Adam M. Cole
General Counsel
California Department of Insurance
45 Fremont Street, 23rd Floor
San Francisco, CA 94105

Re: Review of Aetna Rate Filing
Dear Adam:

We are pleased to submit this report regarding our review of the 2010 rate filings by Aetna Life Insurance Company (i.e., Aetna) to the California State
Department of Insurance (i.e., Department). The Department has retained Axene Health Partners (i.e., AHP) to review the 2010 Aetna individual health insurance rate filings and to determine whether these filings comply with the California $70 \%$ minimum lifetime loss ratio (LLR) requirements.

The scope of our review was defined as:

- Review current rate filings starting with the Actuarial Memorandums filed with the requested rate increases and new business rates, which outline the various benefit plans, expected claim cost development for new plans, base rate and area factor changes, rating structures, summarized loss ratio experience, summarized lifetime loss ratio calculations and assumptions used
- Review any additional correspondence between the Department and Aetna regarding rates and rate filings,
- Develop lists of any additional information needed from Aetna and communicate these to the Department to request of Aetna
- Identify all key actuarial assumptions used by Aetna to prepare lifetime loss ratio calculations for rate filing
- Evaluate appropriateness of all key actuarial assumptions
- Independently develop sample rates for validation and comparison to new Aetna rates
- Validate Aetna calculations to determine appropriateness and accuracy

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- Test rate increases requested to determine whether they meet the loss ratio requirements of the Department (i.e., the $70 \%$ total lifetime and future lifetime loss ratio thresholds)
- Provide oral report as soon as information is available
- Communicate with the Department on a regular basis as to progress on project and any interim findings
- Prepare written report for Department
- Present findings of report as directed by Department (i.e., hearing, etc.)

Aetna submitted a number of modifications of its initial 2010 individual health insurance rate increase request filings, the final two at the request of the Department. The following is a brief description and chronology of these filings:

1. The first was submitted in December 23, 2009 for plans written until June 30, 2009 (included 30 plan variations written through June 30, 2009).
2. A January 29,2010 filing requested new rates for 12 new plan variations to be written with effective dates of July 1, 2010 and later.
3. A February 12, 2010 filing requested rate increases for 20 plan variations introduced in July 2009.
4. A February 23, 2010 filing amending the February 12 filing.
5. A March 24, 2010 filing amending the December 23 and February 23 filings.
6. After CDI retained AHP, Aetna submitted new amended filings on June 28, 2010 for the 50 plan variations that had been resubmitted on March 24.
7. On August 26, Aetna responded to a CDI request to modify its June 28 rate filings by developing Lifetime Loss Ratio (LLR) projections by meaningful plan groupings rather than using only one aggregate LLR for all plans combined.
8. For its August 31 resubmission, Aetna modified its plan groupings to conform to the AHP recommended plan groupings for its LLR projections.

## Executive Summary

We performed a significant amount of analysis on each of the various filings summarized above. These analyses led to the final Aetna submission dated August 31, 2010 that provided the basis for our final conclusions regarding the LLR projections contained therein and the requested rate increases. This report summarizes our review and findings from all the filings. However, this Executive Summary specifically summarizes the key findings and conclusions reached from our review of the August 31 Aetna submission, with only minimal reference to the previous filings.

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Our key findings are as follows:

- Plan Groupings: Aetna initially filed a single overall lifetime loss ratio (i.e., LLR) projection for all benefit plans. We asked Aetna to revise these LLR projections using three or four appropriate plan groupings for their PF-00028 and PF-00354 rate filings. Aetna responded in their August 26 filing with three plan groupings: (1) plans with no deductibles; (2) plans with deductibles at $\$ 1500$ and lower; (3) plans with deductibles above $\$ 1500$. We requested that Aetna consider changing the grouping of the latter two categories to place the break-point at $\$ 2500$ rather than $\$ 1500$ so that both groupings would have about the same statistical credibility on the basis of plan membership.
- LLR Results: Aetna completed LLR projections for the August 31 filing for the 50 plan variations in the December 29,2009 and February 12, 2010 filings using the following plan groupings for the LLR projections: (1) plans with no deductibles; (2) plans with deductibles at $\$ 2500$ and lower; (3) plans with deductibles above $\$ 2500$ (to $\$ 8000$ ).
- Plans with no deductibles: Assumptions and results for the "no deductible" plan grouping were the same as used in the previous 2010 filings and the LLRs satisfy the $70 \%$ minimum loss ratio requirements (i.e. future $L L R=75.0 \%$; total $L L R=74.8 \%$ ).
- \$2500 and under deductible plans: Assumptions for the " \$2500 and under deductible" plan grouping were also the same as in the previous filings. The projected LLR results for this plan grouping also satisfy the $70 \%$ minimum loss ratio requirements (i.e. future $\operatorname{LLR}=87.9 \%$; total LLR $=85.2 \%$ ).
- Over $\mathbf{\$ 2 5 0 0}$ deductible plans: A key assumption change was introduced for the "over $\$ 2500$ deductible" plan grouping. Aetna used more realistic industry "underwriting selection wear-off assumptions" (or claims duration factors) to more closely represent Aetna's expected experience rather than using the simple add-on assumptions used in the previous submissions. Aetna assumed $80 \%$ of Milliman claims duration factors, which were derived from individual health insurance industry experience. Since Aetnaspecific experience factors are not available at this time, we find the " $80 \%$ of Milliman factors" acceptable at this time. With this key assumption change, the LLR projection for the over $\$ 2500$ plan grouping satisfies the $70 \%$ minimum loss ratio requirements (i.e. future $\operatorname{LLR}=77.9 \%$; total LLR $=71.7 \%$ ). However, this also gives rise to the possibility of a need for a reserve similar to an "active

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life-type of reserve" from an actuarial perspective, since future claims cost trends in this LLR projection significantly exceed future premium rate increases, especially in the near term future.

- Policy Reserves: Aetna has agreed to establish an actuarially determined premium stabilization reserve when the new rate increases become effective on October 1, 2010 as requested by the Department.
- Proposed Rate Increases: The aggregate proposed rate increases for the three plan groupings effective October 1, 2010 are:
- no deductible plans: $18.5 \%$
- $\$ 2500$ and under deductibles plans: $19.0 \%$
- Over $\$ 2500$ deductibles plans: $18.5 \%$.

These aggregate increases include a small segment of "Preventive \& Hospital" plans (less than $2 \%$ of the membership) that will not receive any rate increase. These proposed rate increases comply with the minimum $70 \%$ lifetime loss ratio requirements for this block of business, given that Aetna has also agreed to set up an appropriate premium stabilization reserve.

- Claims Duration Factors: We recommend Aetna develop its own experience based claims duration factors for use in future rate filings.
- July 20, 2010 Rate Filing: This report does not include a review of Aetna's Federal Health Care Reform compliant plan filing submitted on July 20, 2010. Nevertheless, our conclusion based on the review of the original 2010 new business rate filing (i.e. for PF-00339) was that the filing meets the minimum $70 \%$ LLR requirement. However, similar premium stabilization reserve considerations need to be followed as discussed above for the "greater than $\$ 2500$ deductible" plan grouping. In that case, our PF-00339 review is an appropriate starting point for the review of the July 20 rate filing.


## Summary of 2010 Initial Rate Filing Submissions by Aetna

The Aetna rate filings for 2010 were first filed in December 2009 and early 2009. We provide the following history of rate filings and reviews performed by AHP to provide a perspective of the process involved in arriving at the final rate filing and our conclusion of its compliance with the $70 \%$ lifetime loss ratio (LLR) requirement. Aetna had initially submitted rate filings that have been assigned three separate PF numbers by the Department:

- PF-2010-00028--This rate filing was submitted on Dec. 23, 2009 requesting rate increases for a July 1, 2010 effective date and included 30 different

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plan/ benefit design variations that included all of Aetna's individual health insurance business written with effective dates prior to July 1, 2009. This rate filing was amended and resubmitted on March 24, 2010 with some minor corrections, including the incorporation of a $30 \%$ rate cap for any policyholder inclusive of the base rate increase, any applicable area factor change and the effect of the aging of the policyholder. Starting July 1, 2009 (coinciding with the introduction of the PF-00354 plans), although continuing to be available to active members, these plans would no longer be actively marketed to new members.

- PF-2010-00354--The initial rate filing for these plans was submitted on Feb. 12, 2010 and requested rate increases for a July 1, 2010 effective date. It included 20 different plan/ benefit design variations for individual health insurance business written with effective dates of July 1, 2009 and later. This rate filing was amended and resubmitted on Feb. 23, 2010 with rate increases for geographic areas 4 and 8 capped at $25 \%$, although the effect of an increase in the premium due to the increase in the age of the policyholder was not included in this rate cap limitation. The subsequent March 24 resubmission then amended the PF-00354 filing to include the same $30 \%$ rate cap, across all geographic areas and inclusive of aging, as discussed above for PF-00028. Similarly, starting July 1, 2010 (with the introduction of the PF-00339 plans), although continuing to be available to active members, these plans would no longer be actively marketed to new members.
- PF-2010-00339--This rate filing was submitted on Jan. 28, 2010. It was for 12 different plan/benefit design variations that would be actively marketed beginning with the requested effective date of July 1, 2010. This rate filing was resubmitted on February 9, 1010 to include a correction to the filed area factor for rating area 6.

As we began our review, we submitted our initial request for clarification of the above rate filings including Aetna's supporting calculation models during the last week of May. Aetna replied with a series of 13 emails on June 4 and subsequently provided responses to additional questions and requests for clarification that we submitted through the Department as our analysis of the above filings progressed. Also submitted for our review for comparison were the prior year's filing (for rates effective July 1, 2009) for both PF-00028 and PF-00354 plans.

Table 1 summarizes the requested premium increases and projected lifetime loss ratios as included in Aetna's Initial 2010 filings, including the above-referenced

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amendments, compared with corresponding amounts from Aetna's prior year filing. It is interesting to note that Aetna's LLR increased fairly significantly from the 2009 filing to the original 2010 filing ( $70.3 \%$ vs. $75.6 \%$ ). As we will discuss below, a significant error was found in the 2010 LLR projection causing Aetna to withdraw its filing. Our estimate shows that with the error corrected, the 2010 projection would have resulted in an LLR virtually equal to the 2009 filing.

Aetna's filed Lifetime Loss Ratio projection included in the actuarial memorandums for PF-00028 and PF-00354 is based on the combined projection for these two sets of plans. The initial filing indicated that new business sales volume for the first 12 months (July 2009 through June 2010) was expected to be $6.5 \%$ of the in-force membership volume per month. However, the original filings did not include the new sales in the LLR projections

| Table 1Comparison of 2009 and 2010 Initial Filing (incl. Amendments) |  |  |  |
| :---: | :---: | :---: | :---: |
|  | PF-00028 | PF-00354 | PF-00339 |
| Per 2009 Filing |  |  |  |
| Aggreg Prem Incr, Eff. 7/1/09 * | 17.3\% | (initial |  |
| Assumed Aggreg Prem Incr, Eff. 7/1/10 in LLR * | 16.0\% | filing |  |
| Assumed First-Yr (2009) Claims Trend ** | 15.5\% | discussed |  |
| Projected LLR | 70.3\% | below)*** |  |
| Initial 2010 Filing |  |  |  |
| Aggreg Prem Incr, Eff. 7/1/10 * | 18.7\% | 18.7\% | (initial |
| Assumed Aggreg Prem Incr, Eff. 7/1/11 in LLR * | 17.0\% | 17.0\% | filing |
| Assumed First-Yr (2010) Claims Trend ** | 15.7\% | 15.7\% | discussed |
| Projected LLR | 75.6\% | 75.6\% | below)*** |
| * Aggregate Prem Incr including area factor changes, <br> ** Annual CIms Trend including underlying trend, clms <br> ***Aetna's initial LLR calculations for 00354 and 0033 referenced in the filings measured the LLR over a si period, along w/ other issues discussed. | fore impact lection and re discussed ificantly tru | age-up of W wear-o below, sinc ated lifetim | nsureds <br> the LLR's <br> projection |

## Aetna's Re-Submitted Rate Filing For PF-00028 and PF-00354

With respect to the initial PF-00028 and PF-00354 filings, we identified a number of methodological adjustments that were needed in the lifetime LLR projection. Most notably, there were several corrections in particular that were needed in the calculated future premium income levels, which had been understated in the
LLR projection which did not properly incorporate the requested rate increases.

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Shortly after we identified the premium trend issues and were preparing our next request for additional information, Aetna withdrew its rate filing for PF00028 and PF-00354 on June 24 and asked that we wait for their new amended rate filing submission before continuing our review. At that point we submitted a summary outlining the specific methodological issues found, including a list of several other adjustments we were considering, pending receipt of clarification and other information requested from Aetna. The attached Exhibit A summarizes these initial methodology corrections along with subsequent adjustments made after receiving the additional information from Aetna. The table shows the cumulative impact on the projected LLR for each revision in succession but still performing the PF-00028 and PF-000354 plan LLR projections on a combined basis.

Aetna submitted amended rate filings for PF-00028 and PF-00354 on June 28. Their cover letter stated that the new "submission corrects a simple calculation error concerning the premium development in the lifetime loss ratio (LLR) demonstration." However, on review of the amended filing, there were a number of material assumption changes that were incorporated into the revised LLR demonstration in the new filings. With the assumption changes made, the cover letter affirmed Aetna's need for the same $18.7 \%$ rate increase requested in the original rate filing. In addition, the two PF numbers were still combined for LLR projection purposes.

At this point we continued our review based on the resubmitted filings and other information received from Aetna in response to our request. Particular emphasis was then also given to considering and analyzing the implications of the various assumption changes in the amended filing. This was especially important, since these changes in total tended to offset the negative impact on the LLR projection caused by the correction of the material error found in original LLR projection and increased the LLR. It was, therefore, necessary to validate both the appropriateness and the impact on the LLR projection of these assumption changes.

The following points summarize the impact of the key methodological and assumption changes in the June 28 filings, as outlined in Exhibit A.

- Methodological Correction (before changes to assumptions) - Isolating the corrections in the projected premium trends for the first two projection years (following the base experience year) in the LLR projections, which also affected all future years' projected premium

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levels, would have reduced the LLR from the originally filed $75.6 \%$ to $70.1 \%$. Incorporating the other methodology-related corrections that we had outlined prior to the withdrawal of the original filing (but with no other changes in assumptions) resulted in a further reduction to our projected total LLR calculation down to $69.2 \%$ (Exhibit B-1), including the 6.3\% new business assumption. This new business assumption was not included in Aetna's Initial LLR projection even though the Actuarial Memorandum included the $6.3 \%$ in its list of assumptions. For our further discussion below, we use this revised $69.2 \%$ LLR as our starting point to progressively illustrate the effects of the other assumption changes in the amended filing.

- Revised Future Rate Increase Assumptions - Future premium trends beginning in July 2011 were reduced in the re-filed projections from 17\% to $13.8 \%$ for 3 years and $12.8 \%$ thereafter. In addition, the resubmitted projection recognized the 2-month delay in the implementation of the rate increases to September 1, returning to a July 1 implementation date for rate increases in future years (see Table 2 below). This adjustment raised the LLR above from $69.2 \%$ to $71.9 \%$ (Exhibit B-2). We agree that it is appropriate to project premium increases in future years such that the premium trends (i.e., rate increases) and underlying claims trends in the future converge to be equal to one another within some reasonable period of time. The original rate filings projected premium rate increases after the first two projection years at $17 \%$ per year but only projected claims cost increases with a $13.8 \%$ trend per year, which is not realistic. So we were not surprised by this correction.

| Projection Period |  | gate Pr ncludin | le 2 um Rat rea Cha |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Initial Filing |  | Resubmitted Filing |  |
|  |  | Eff. | Rate | Eff. | Rate |
|  |  | Date | Incr | Date | Incr |
| 8/1/09 | - 6/30/10 | 7/1/09 | 17.3\% | 7/1/09 | 17.3\% |
| 7/1/10 | - 6/30/11 | 7/1/10 | 18.7\% | 9/1/10 | 18.7\% |
| 7/1/11 | - 6/30/12 | 7/1/11 | 17.0\% | 7/1/11 | 13.8\% |
| 7/1/12 | - 6/30/13 | 7/1/12 | 17.0\% | 7/1/12 | 13.8\% |

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| $7 / 1 / 13$ | - | $6 / 30 / 14$ | $7 / 1 / 13$ | $17.0 \%$ | $7 / 1 / 13$ | $13.8 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $7 / 1 / 14$ | - | $6 / 30 / 15$ | $7 / 1 / 14$ | $17.0 \%$ | $7 / 1 / 14$ | $12.8 \%$ |
| $7 / 1 / 15-$ | $6 / 30 / 16$ | $7 / 1 / 15$ | $17.0 \%$ | $7 / 1 / 15$ | $12.8 \%$ |  |
| $7 / 1 / 16-6 / 30 / 17$ | $7 / 1 / 16$ | $17.0 \%$ | $7 / 1 / 16$ | $12.8 \%$ |  |  |

- Revised Claims Trend Assumptions - The original rate filings for PF00028 and PF-00354 assumed that the underlying claims trend would be $12.8 \%$ per year and that an additional trend for the effects of selection and underwriting wear-off should be added. The $12.8 \%$ underlying claims trend was derived based on Aetna's trend analysis of its entire California book of Group business, reflecting modeled unit cost trend across all of its provider contracts by geographic area, including Group utilization trends and deductible-leveraging, since the latter is applicable to its individual product designs. The underlying trend of $12.8 \%$ was not changed in the re-submitted filing. However, the additional trends for underwriting wear-off and selection were changed. To account for underwriting wearoff, in the initial filing Aetna added $1 \%$ to the underlying trend during each of the future projection years (based on an aggregate trend adjustment for the block, as opposed to being directly modeled based on the duration of the various segments of its in-force). However, the revised filing assumption used a $4 \%$ add-on in the first two projection years, grading down by $1 \%$ per year for the next 4 years thereafter instead of the original flat $1 \%$ add-on for each year. In addition for the first two years of the projection, Aetna originally assumed $1.9 \%$ per year as additional claims trend for selection related to the high individual policy lapse rates anticipated. This assumption was revised slightly in the resubmitted filing to $1.7 \%$ and $1.9 \%$, respectively. Table 3 below compares the resulting total assumed claims trend by year in the initial versus resubmitted filings.

| Table 3Total Claims Trend(including Selection \& U/W Wear-off) |  |  |
| :---: | :---: | :---: |
|  | Annual Claims Trend |  |
| Projection Period | Initial <br> Filing | Resubmitted Filing |
| 8/1/09 - 6/30/10 | 15.7\% | 18.5\% |

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| $7 / 1 / 10$ | $-6 / 30 / 11$ | $15.7 \%$ | $18.7 \%$ |
| :--- | :--- | :--- | :--- |
| $7 / 1 / 11$ | - | $6 / 30 / 12$ | $13.8 \%$ |
| $15.8 \%$ |  |  |  |
| $7 / 1 / 12$ | - | $6 / 30 / 13$ | $13.8 \%$ |
| $14.8 \%$ |  |  |  |
| $7 / 1 / 13$ | $-6 / 30 / 14$ | $13.8 \%$ | $13.8 \%$ |
| $7 / 1 / 14-$ | $6 / 30 / 15$ | $13.8 \%$ | $12.8 \%$ |
| $7 / 1 / 15-6 / 30 / 16$ | $13.8 \%$ | $12.8 \%$ |  |
| $7 / 1 / 16-6 / 30 / 17$ | $13.8 \%$ | $12.8 \%$ |  |

In addition, a new underwriting selection factor of $85 \%$ was introduced for the new business being written (PF-00354) during the first projection year, $7 / 1 / 2009$ to $6 / 30 / 2010$, in the LLR demonstration. That is, it was assumed that, because of underwriting, the expected claims cost during the first policy year from issue would be $85 \%$ of the average claims cost of the in-force block of business. This assumption was not in the original filing. The effect of these two claims trend-related changes resulted in a slight increase in the LLR from the above, $71.9 \%$ to $72.1 \%$ (Exhibit B-3).

- Revised new business sales assumption - The new sales assumption was changed from $6.3 \%$ to $4 \%$ (recall that our LLR projection above has incorporated the $6.3 \%$ new sales assumption even though Aetna's projection had not). This reduction to a $4 \%$ new sales assumption increased the LLR from $72.1 \%$ to $72.9 \%$ (Exhibit B-4).


## Other Issues Regarding Aetna's Originally Amended Filings

For the sake of completeness, it was also necessary to test any other refinements that we believed should have been incorporated into the LLR projection model for potential materiality with regard to the $70 \%$ minimum LLR requirement. Some of these refinements were expected to reduce the LLR percentage still further. The following are additional refinements that improve the LLR projection model for PF-00028 and PF-00354 that had not been explicitly incorporated into the Aetna model:

- Refinements to Reflect Changes in New Business Administrative Changes and Modeled Approach - We have recognized that new business sales commencing 7/1/2009 would be receiving quarterly rate increases instead of only annually on July 1 of the following year. Also, our modeling explicitly recognized the timing of each new annual renewal increase. These adjustments were directly applied against modeled monthly membership by duration, reflecting expected monthly new sales and lapse assumptions, versus the more simplified original approach,

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which did not incorporate such adjustments. Additionally, we utilized weighted average midpoints for claims trending and discounting based on the monthly modeling, giving more precise results in light of the transition from a growing block to a declining block (given assumption of new sales only during the initial period). The net effect of these three changes (some positive, some negative) was a small reduction of the LLR of about $0.4 \%$ to $72.5 \%$ (see Exhibit B-5).

- Adjustment to Reflect The Differences Between 00028 and 00354 Plans Under Aetna's approach, PF-00028 and PF-00354 were modeled together and it was assumed that the expected aggregate experience of each of the two would be about the same. That is, the history of PF-00028 would be predictive of what would be expected of PF-00354, which became effective only on July 1, 2009, and only had one month of claims experience included in the experience period being measured $(7 / 1 / 2006$ through $7 / 31 / 2009$ ). By and large, if the plan of benefits and expected loss ratios for the two PF numbers would be substantially the same, this would be a reasonable assumption. However, PF-00028 included 30 different plan/benefit design variations and PF-00354 has 20. Also, one plan in PF00028, MC1500, had a much higher 3-year loss ratio (well above $100 \%$ for the three experience years) than any of the other plans. In addition, it is not one of the plans even included in the list of plans for PF-00354. So the inclusion of this high loss ratio experience product to predict PF-00354 claims experience overstates the projected claims costs. Adjusting the 3year experience period $8 / 1 / 06-7 / 31 / 09$ by eliminating this plan from the PF-00028 plans reduces the overall average loss ratio for the rest of the 29 plans from $71.7 \%$ to $66.73 \%$. This is virtually equal to the average loss ratio for those benefit designs in PF-00028 that will also be in PF-00354, 66.67\% (Exhibit F). To reflect this difference, a claims adjustment factor of 0.93 (7\% discount) was applied for new business under PF-00354 relative to the prior experience in our projection. In addition, the average premium comparison for those plan/benefit design variations included in both PF numbers shows that the PF-00354 premiums are on average about $3.2 \%$ higher than the PF-00028 plans. Only about $0.5 \%$ of this difference can be accounted for by the higher ambulance benefits in the 00354 plans, per our estimates. To account for this relative premium level difference, a $2.7 \%$ relative premium increase was likewise included on new sales under PF-00354 in the combined LLR projection. The net effect of all of these adjustments results in another $0.4 \%$ reduction in the LLR from $72.5 \%$ to 72.1 \% for the combined PF-00028/00354 projection (Exhibit B-6). If PF00028 and PF-00354 were projected separately, the result would be a

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slightly higher projected LLR for PF-00028 (since these adjustments would not be applicable), and a significantly lower projected LLR for PF-00354.

- The Underwriting Wear-Off (or Duration) Factors - Another concern about the LLR projections, in both the original and amended filings, is the underwriting wear-off assumption (also referred to as duration factors). Aetna has used two fairly crude adjustments to represent these factors in these two filings (level 1\% in the first and 4\% graded to $1 \%$ add-ons to the underlying claims trend). Neither of these assumptions can be validated against Aetna's new business duration factors, which are presumably also their new business pricing selection factors. In testing these assumptions by comparing LLR projections with these vs. the new business duration factors, the latter would result in a higher LLR. Using industry average duration factors would result in even higher projected LLR percentages. So in that respect, these crude assumptions are "conservative" in relation to the calculation of LLR from the Department's perspective (i.e. result in a lower LLR). We project the PF-00028/PF-00354 LLR, using the PF-00339 duration factors, to increase from $72.1 \%$ to $73.0 \%$ (see Exhibit B-7). Using the 2006 Society of Actuaries' study factors increases the LLR even more. In fact, if we assume that the "best estimate" LLR for PF-000028/PF-00354 falls in a range using PF-00339 duration factors as one estimate and the industry averages as another, the range would be $73.0 \%$ to $76.7 \%$.
- Aetna's Aggregate LLR Projection Approach - As already noted above, Aetna's LLR projection approach combines all 50 plan variations within PF-00028 and PF-00354 into one aggregate LLR projection. This does not appear to meet the spirit of the Department's regulatory requirements for meeting the minimum $70 \%$ LLR requirements by plan. Therefore, Aetna was asked to split its LLR projection into at least three or four meaningful plan groupings, which then resulted in two additional amended filings for these plans in late August.


## Aetna's August 26 Submission

Aetna revised its aggregate LLR projection for the 50 plans included under the PF-00028 and PF-00354 rate filings and provided LLR projections for three plan groupings: (1) plans with no deductibles, (2) plans with deductibles of $\$ 1500$ or less and (3) plans with deductibles of $\$ 2500$ or more. The membership breakdown for the month of June 2010 for the three plan groupings was about 4600, 4600 and 56,000 respectively.

- Plans With No Deductibles - Assumptions are generally consistent with the June 28, 2010 filing for these two PF numbers. The accumulated

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historical loss ratio through June 2010 was $74.1 \%$, the projected future LLR was $74.7 \%$ and the total LLR was $74.1 \%$.

- Plans With Deductibles of $\$ 1500$ or Less - Assumptions are generally consistent with the June 28, 2010 filing with the accumulated historical loss ratio through June 2010 at 100.7\%, the projected future LLR at 106.4\% and the total LLR at 103.4\%.
- Plans With Deductibles Greater Than \$1500-Assumptions are generally consistent with the June 28, 2010 filing with the accumulated historical loss ratio through June 2010 at $68.9 \%$, future LLR at $73.4 \%$ and the total LLR at 71.3\%.
Since the plan groupings were so disproportional in terms of their potential for statistical credibility ( 4600,4600 and 56,000 ), the Department asked that Aetna change the grouping of its last two categories to "\$2500 and below" and "above \$2500."


## Aetna's August 31 Submission

Upon request, Aetna refiled LLR projections for three plan groupings: (1) plans with no deductibles, (2) plans with deductibles of $\$ 2500$ or less and (3) plans with deductibles greater than $\$ 2500$ (to $\$ 8000$ currently). This resulted in a membership breakdown of about 4600 for the first grouping, 24,000 for the second and 37,000 for the third for in the month of June 2010.

- Plans With No Deductibles - Assumptions are the same as this plan grouping for the August 26 filing and resulted in slightly higher LLR projections at $74.4 \%, 75.0 \%$ and $74.8 \%$, respectively. Our validation of this LLR projection is shown in Exhibit P-1.
- Plans With Deductibles of $\$ 2500$ and Less - Assumptions are consistent with the $\$ 1500$ and under plan grouping in the August 26 filing. The accumulated historical loss ratio through June 2010 is $82.8 \%$, the future LLR is $87.9 \%$ and the total LLR is $85.2 \%$. The validation of this LLR projection is shown in Exhibit P-2.
- Plans With Deductibles Greater Than $\mathbf{\$ 2 5 0 0}$ - Most assumptions are consistent with the "greater than $\$ 1500$ deductible" plan grouping, except the underwriting wear-off (or claims duration factors) were changed to more closely reflect expected industry factors and used $80 \%$ of the claims trend impact from the Milliman large deductible claims duration factors. Aetna also compared these adjusted Milliman factors to the large deductible claims duration factors used by Anthem in its 2010 rate filing for California. It is clear that using these latter factors would have resulted in a larger claims trend add-on than the Milliman factors. We have therefore accepted these factors as reasonable. We have validated

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the calculated cumulative historical loss ratio through June 2010 to be $63.8 \%$, the future LLR to be $77.9 \%$ and the total LLR to be $71.7 \%$, using these new Aetna assumptions. Our validation of this calculation is shown in Exhibit P-3. However, this LLR projection results in the use of future year total claims trend assumptions that in the first few years of the projection period are higher than the assumed premium rate increases in those same years. This raises the concern that additional reserves comparable to active life reserves may be required from an actuarial perspective that could be used as a potential offset against higher rate increases in the future. Aetna has agreed to hold such an actuarially determined reserve amount as a premium stabilization reserve (PSR) for this purpose.

- The 70\% Lifetime Loss Ratio Requirement - Given the above findings, we conclude that the most recent Aetna filing (August 31) complies with the regulatory minimum 70\% LLR requirement, provided that Aetna also appropriately accounts for the potential PSR requirement discussed above.


## New Business Rate Filing For PF-00339

Aetna filed the PF-2010-00339 plans as the plans that would be actively marketed upon rate approval. Since this filing has not yet been approved and effective October 1, 2010 new business issues will need to comply with the Federal Health Care Reform legislation, we believe that our previous review for the new business plans will provide a basis to evaluate the new Aetna rate filing dated July 20, 2010 for a requested effective date of October 1. While we have not reviewed that filing for this report, we summarized our review of the PF-00339 filing incorporating the claims duration factor assumption changes used by Aetna in the August 31 filing. In developing the LLR for this new business in the original filing, Aetna made the simplifying assumption that the cohort of new business issued during each subsequent year in the projection period (9 years) would have an equal amount of new business premium issued each year with exactly the same loss ratios.

In analyzing the approach used by Aetna, it appears that the first year (i.e., calendar year 2006) loss ratio experience of PF-00028 plans (63.7\% as shown in the PF-00028 LLR historical experience) was used as the duration-1 loss ratio for the PF-00339 LLR projection. Based on our review, this does not appear to be the appropriate starting point considering the data available. Exhibit C shows our approach in calculating the estimated first-year loss ratio from the base

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experience period, $8 / 1 / 2008$ through $7 / 31 / 2009$. The main adjustments needed are the following:

- First, the base period aggregate loss ratio for PF-00028, 73.5\%, needs to be trended to the beginning of the period in which the new plans will be written using the expected trends for rate increases and the claims costs. The result is an estimated $67.0 \%$ total loss ratio for the first year, based on the average duration underlying the base period experience. We have assumed a 10/1/2010 effective date.
- This $67.0 \%$ loss ratio was then adjusted to the expected duration- 1 loss ratio using a relative duration/ selection factor adjustment of .956, as shown, bringing the loss ratio down to $64.1 \%$. This factor was calculated using the PF-00339 duration factors applied to the estimated PF-00028 experience by duration within the base period, relative to the duration- 1 factor.
- However, this total 00028 loss ratio includes the experience of the high loss ratio plan, MC 1500, which will not be available for future new business sales. It is therefore necessary to eliminate the experience of this plan from the base period. This results in a loss ratio reduction of $7.5 \%$ (i.e. multiplier of .925 ) bringing the expected first duration loss ratio down from $64.1 \%$ to $59.2 \%$.
- A few additional adjustments, which we believe are necessary, largely offset one another in this case, but did bring the duration-1 loss ratio up to $59.7 \%$. This means that the LLR projection for this set of plans needs to start with a first year loss ratio that is at least a full 4 percentage points lower than was used in the Aetna LLR projection.

In evaluating the projected LLR for PF-00339 incorporating the starting loss ratio adjustments discussed above, it appears that the Aetna methodology uses a "net lapse" factor approach in the projection. That is, the net lapse appears to be on the order of an expected lapse rate minus the expected future premium rate increases anticipated.

On the other hand, the assumed lapse rates appear to be much lower than we would expect. They are also much lower than Aetna assumed for the in-force business (00028/00354) projection. To assess the impact of varying the lapse rate assumptions on the LLR projections, we used the assumptions summarized in the attached Exhibit D. The LLR projections for these four scenarios are shown in detail in Exhibits E-1 to E-5 attached. The following briefly describes the assumptions used in these scenarios:

- Scenario-1: basically follows Aetna's original LLR projection assumptions

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- Scenario-2: similar assumptions, except that we have included our firstyear loss ratio adjustment. Also, we have included explicit premium and claims trend assumptions that produce the same net premium lapse rates (i.e., lapses, offset by premium increases) as Scenario 1. In particular, this shows the effective underlying policy lapse rate assumptions consistent with this premium lapse level that produce the net lapse rates in the first scenario.
- Scenario-3: Have moderately increased the policy lapse rate level, thereby decreasing the weight given to the later duration experience in the LLR calculation, thus reducing the expected LLR
- Scenario-4: Further increased the policy lapse rate assumption to be more comparable to Aetna's experience (i.e., assumptions incorporated into the LLR calculation for its other Individual plans under PF-00028/00354), assuming that this block will experience similar lapse rates.
- Scenario-5: This scenario uses the same assumptions as scenario 4, except has substituted the $80 \%$ Milliman claims duration factors for the previously used claims duration factors assumed for the PF-00339 filing. This scenario represents what we regard as a "best estimate" scenario, since we have accepted this as part of our review for PF-00028 and PF00354 above.

The projected LLR's are summarized in the following Table 5, which shows the LLR for both a single cohort of new sales as well as for the cumulative results including new sales each year for the first 10 years. Additionally this shows the results separately based on the truncation of the LLR calculation at the end of $10^{\text {th }}$ year. This truncated cumulative approach was used by Aetna to calculate the projected LLR to justify the new rates in its filing for PF-00339. The table also shows the full LLR calculation with projections extended through year 25 but also with 10 years of new sales. This distinction produces a significantly different result, especially given the assumed new sales level over years 1-10 as originally assumed, since truncating the projection causes the measured LLR to omit any future late-duration, higher loss ratio experience, thus understating the true lifetime LR.

As shown below, Aetna's PF-00339 filing showed a projected LLR of 72.2\% (also see Exhibit E-1). However, this is misleading, since a full lifetime calculation (25 years in this case) produces a much higher LLR, $77.4 \%$. Note that the single cohort, full lifetime calculation yields virtually the same projected LLR, $77.6 \%$. In fact, note that the single cohort calculations achieve virtually the same result as the cumulative results as long as a full lifetime is used in the calculations. Since

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the single cohort method is much easier and "straight forward" method, we recommend this approach for future new business rate filings.

As the lapse assumption is increased in the following scenarios, the LLR understandably decreases (refer to Exhibits E-1 through E-5 and Table 5 below). Scenario 5, which we have defined as our best estimate scenario because it uses Aetna's most recent claims duration factors (i.e. $80 \%$ of Milliman), results in a projected LLR of $76.3 \%$. Note that both Scenarios 4 and 5 have assumed the same lapse assumptions and premium and normal (or underlying) claims trends (see Exhibit D). The difference between the two scenarios is that Scenario 4 uses the claims duration factors used in the original Aetna PF-00339 filing and Scenario 5 uses the claims duration factors introduced in the August 31 filing as presumably more representative of Aetna's actual experience (see Exhibits E-4 and E-5). However, since this projection also has future claims cost trends significantly higher than the projected premium rate increases, especially in the near term, the same can be said about the potential need for additional reserves akin to active life reserves. This will need to be part of the consideration for the Department's review process for the new Health Care Reform compliant filing of July 20, 2010 to be sure that appropriate premium stabilization reserves are established for the new business.

|  | Table 5 <br> LLR Scenario Testing for PF-00339 Projected LLR Results |  |  |  | Scenario 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Scen-1 | Scen-2 | Scen-3 | Scen-4 |  |
| LLR for Single Cohort of New Sales |  |  |  |  |  |
| Per Truncated Projection at end of Yr 10 Based on APV of Total Lifetime | $75.3 \%$ $77.6 \%$ | $70.4 \%$ $72.6 \%$ | $69.3 \%$ $70.4 \%$ | $68.2 \%$ $69.0 \%$ | $75.6 \%$ $76.3 \%$ |
| LLR Including New Sales in Yrs 1-10 |  |  |  |  |  |
| Per Truncated Projection at end of Yr 10 | 72.2\% | 66.6\% | 66.0\% | 65.2\% | 72.0\% |
| Lifetime | 77.4\% | 72.3\% | 70.4\% | 69.0\% | 76.3\% |

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## Additional Testing of Premium Rate Development and Premium Rate Structures

We performed sample calculations of the new rate tables, assuming that the requested rate increases would be approved and implemented and validated that the calculations were being done correctly. This involved independently developing sample rates for validation and comparison to new Aetna rates, and testing pricing relativities within the rating tables for 2009 and 2010. The following exhibits summarize the results of key tests performed, in addition to the analysis of pricing by plan (e.g., reasonableness of 00028 vs. 00354 pricing) already discussed above. However, the following tests were performed against the rate tables filed with the original 2010 rate filings. The somewhat revised premium rate increases that will result from the August 31 submission were not available to us for additional testing for these revisions.

- Exhibit G-1 provides a comparison of $7 / 1 / 10$ filed rates for benefit plans/designs included in both the PF-00028 and PF-00354 filings. This compares the rates by rating area along with the weighted total used to validate actual versus pricing differentials and quantify the relative price differential across plans and areas. This also showed a consistent relationship across plans (PF-00028 and PF-00354), reflecting the pricing adjustment for benefit changes (Ambulance limit) within each area, except that a significant pricing adjustment was implemented for new sales under the original 7/1/09 PF-00354 MC 5000 plan (per Exhibit G-1 and Exhibit G-2)
- Exhibit G-2 provides a similar comparison; tested using the prior year ( $7 / 1 / 09$ ) rates, to validate expected pricing differentials.
- Exhibit H validates pricing relativities by area for each plan, to validate and assess relative pricing factors by area separately for PF-00028, PF00354 and PF-00339.
- Exhibit I summarizes testing of actual versus expected premium rate increases by plan and area, based on stated base rate increases and area factor adjustments by policy form filing.
- Exhibit J summarizes the validation of sample rate calculations based on stated trends, rate additions, applicable base rates, area factor changes, etc., as stated in the respective Actuarial Memorandums, versus actual filed final rate tables.
- Exhibit K-1 validates rate increases by plan, geographic area, age, and contract type. This is illustrated for a particular plan/area, although testing extended to all plans/areas. This exhibit illustrates the results for plans rated on a single-age basis

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- Exhibit K-2 illustrates similar testing to validate rate increases on plans established with age-banded rating.

We thank you for the opportunity to perform this review of Aetna's 2010 individual health insurance rate filing. We appreciate the cooperation and responsiveness of the Department and the staff of Aetna to our requests for additional information during the project.

Please let us know if you have any questions.
Sincerely,


John F. Fritz, FSA, MAAA Consulting Actuary
cc: Jay Ripps, FSA, MAAA, DOI
Perry Kupferman, FSA, MAAA, DOI
David Axene, FSA, CERA, MAAA, FCA, AHP
David Bohmfalk, FSA, MAAA, AHP

## Anthem LLR Calculation Summary of Cumulative Adjustments to LLR

APV LLR
Total
Lifetime
75.6\%

Original LLR
Methodology Adjustments Applic to Initial Filing (cumulative impacts)

- Corrections to Prem Trend Calculation for first 2 projection periods: **
70.1\%
- AHP: Include add'l 0.5 mo's of discounting of clams relative to premium 70.0\%
- AHP: Extend Proj. period to $6 / 30 / 17$, vs Orig. which was truncated at $12 / 31 / 16$ ) 69.9\%
- Midpt-to-Midpt Trend Mos for Clms for Proj Per-1 \& Per-2 (11.5+11.5, resp, vs Orig of 11+12, resp)
69.9\% (pending adj. to reflect wtd avgs per modeled mbrship by mo, per Renewal Dist'n \& N.Sales clarification)
- Assumed New Sales per Month starting 8/09 through 6/10
changed to $6.3 \%$ per month per Filing, vs $0 \%$ per Orig LLR calculation


## Add'I Changes to Key Assumptions Per Aetna Refiling

- Revised Future Prem Rate Incr. in July-2011+ (13.8\%/12.8\% instead of 17.0\%) and 2-Mo Deferral to 9/1/11
- Revised Claims Trend Assumptions for U/W_Wear-off, Claims Selection, and Relative Claims Level for New Sales (Yr-1) vs Existing Block (changed from 85\% from No Adj.)
- Revised New Sales Assumption (changed from 6.3\% to 4\% / month from 8/09-6/09)


## Additional AHP Adjustments pursuant to Aetna Responses / Clarification

- Adj to recognize modeled impacts of:

1) Qtrly Prem Rate Incr (per filings) for N.Sales commencing 7/1/09 (00354) rather than July 1st each year each year (subj to initial 2-mo deferral of 7/1/10 rate incr)
2) Timing of Subsequent Prem Rate Incr occurring on Policy Anniv rather than July 1st each Yr, for N.Sales commencing 7/1/09 (00354)
3) Wtd Avg Midpts for Claims Trending (\& Discnting) to reflect assumed monthly N.Sales \& monthly Lapses and Aetna clarification of Renewal Dist'n \& confirmation/modification of New Sales assumptions

- Adj for Impact of Relative Prem Level applic to N.Sales commencing 7/1/09 (00354) Relative to 00028 Premium
- Alternative claims adjustments for Selection, U/W Wear-off \& N.Sales discount, per modeled membership by monthly duration (per Lapses \& N.Sales) \& alternative Durational factors applied: with AHP adj for relative clms (LR) per 00354 plan offerings relative to base experience (e.g., MC 1500) A) Using Aetna PF-2010-00339 Durational Factors


## AHP Lifetime Loss Ratio Calculation



[^0]
## AHP Lifetime Loss Ratio Calculation

| Assumed |  |  |  |  |  |  | Total |  |  |  |  |  | Cumul APV Inc'd |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Aggregate Amts (\$) |  | PMPM Amounts |  | PMPM | Undisc. Inc'd | Present Values (APV) |  |  |  |  |
| \# | Claims | Mbr | Earned | Inc'd | Earned | Inc'd | Clms |  | Annua | (\$000) | Cumul | \$000) |  |
| Mos | Midpt | Months | Prem | Claims | Prem | Claims | Trend* | LR | Prem | Clms | Prem | Clms | LR |


| Actual Experience |  |  |  |  |  |  |  |  |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1 / 1 / 06-12 / 31 / 06$ | 12 | $7 / 1 / 06$ | 138,090 | $18,701,502$ | $11,904,512$ | 135.43 | 86.21 | $63.7 \%$ |
| $1 / 1 / 07-12 / 31 / 07$ | 12 | $7 / 1 / 07$ | 373,960 | $55,963,352$ | $41,076,857$ | 149.65 | 109.84 | $73.4 \%$ |
| $1 / 1 / 08-12 / 31 / 08$ | 12 | $7 / 1 / 08$ | 553,748 | $94,793,575$ | $67,778,373$ | 171.19 | 122.40 | $71.5 \%$ |
| $1 / 1 / 09-7 / 31 / 09$ | 7 | $4 / 15 / 09$ | 408,555 | $74,460,809$ | $55,300,317$ | 182.25 | 135.36 | $74.3 \%$ |
|  |  | $\mathbf{1 , 4 7 4 , 3 5 3}$ | $\mathbf{2 4 3 , 9 1 9 , 2 3 8}$ | $\mathbf{1 7 6 , 0 6 0 , 0 5 9}$ | $\mathbf{1 6 5 . 4 4}$ | $\mathbf{1 1 9 . 4 2}$ | $72.2 \%$ |  |
| $8 / 1 / 08-7 / 31 / 09$ | 12 | $2 / 1 / 09$ | 654,314 | $118,732,612$ | $87,326,637$ | 181.46 | 133.46 | 0.735 |


| Projected Experience |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8/1/09 - 6/30/10 | 11 | 1/15/10 | 840,264 | 176,311,728 | 128,964,669 | 209.83 | 153.48 | 1.150 | 73.1\% | 180,656 | 131,874 | 452,218 | 327,281 | 72.4\% |
| 7/1/10-6/30/11 | 12 | 1/1/11 | 892,679 | 216,499,042 | 157,559,567 | 242.53 | 176.50 | 1.150 | 72.8\% | 211,673 | 153,734 | 663,891 | 481,016 | 72.5\% |
| 7/1/11-6/30/12 | 12 | 1/1/12 | 582,144 | 165,001,865 | 116,928,976 | 283.44 | 200.86 | 1.138 | 70.9\% | 153,646 | 108,661 | 817,537 | 589,676 | 72.1\% |
| 7/1/12-6/30/13 | 12 | 1/1/13 | 379,622 | 122,448,103 | 86,773,149 | 322.55 | 228.58 | 1.138 | 70.9\% | 108,581 | 76,790 | 926,118 | 666,466 | 72.0\% |
| 7/1/13 - 6/30/14 | 12 | 1/1/14 | 247,558 | 90,869,872 | 64,395,158 | 367.06 | 260.12 | 1.138 | 70.9\% | 76,744 | 54,275 | 1,002,862 | 720,741 | 71.9\% |
| 7/1/14 - 6/30/15 | 12 | 1/1/15 | 161,438 | 66,843,290 | 47,788,597 | 414.05 | 296.02 | 1.138 | 71.5\% | 53,766 | 38,361 | 1,056,629 | 759,102 | 71.8\% |
| 7/1/15 - 6/30/16 | 12 | 1/1/16 | 105,281 | 49,171,239 | 35,465,883 | 467.05 | 336.87 | 1.138 | 72.1\% | 37,669 | 27,115 | 1,094,298 | 786,217 | 71.8\% |
| 7/1/16-6/30/17 | 12 | 1/1/17 | 68,657 | 36,170,547 | 26,320,119 | 526.83 | 383.36 | 1.138 | 72.8\% | 26,388 | 19,162 | 1,120,685 | 805,379 | 71.86\% |
|  |  |  | 3,277,643 | 923,315,685 | 664,196,117 | 281.70 | 202.64 |  | 71.9\% | 849,123 | $\begin{aligned} & 609,971 \\ & 71.8 \% \end{aligned}$ | uture Yrs |  | $\begin{gathered} \hline \text { LLR } \\ \text { (APV } \\ \text { Basis) } \end{gathered}$ |
| Total All Years |  |  | 4,751,996 | 1,167,234,923 | 840,256,176 | 245.63 | 176.82 |  | 72.0\% | 1,120,685 | 805,379 |  |  |  |
|  |  |  |  |  |  |  |  |  | discou |  | 71.9\% | otal Lifetim |  |  |

[^1]
## AHP Lifetime Loss Ratio Calculation

| Assumed |  |  |  |  |  |  | Total |  |  |  |  |  | Cumul APV Inc＇d |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Aggregate Amts（\＄） |  | PMPM Amounts |  | PMPM | Undisc． Inc＇d | Present Values（APV） |  |  |  |  |
| \＃ | Claims | Mbr | Earned | Inc＇d | Earned | Inc＇d | Clms |  | Annua | （\＄000） | Cumul | \＄000） |  |
| Mos | Midpt | Months | Prem | Claims | Prem | Claims | Trend＊ | LR | Prem | Clms | Prem | Clms | LR |


| Actual Experience |  | 促 | 兂 |  | 兂 | Prom |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1／1／06－12／31／06 | 12 | 7／1／06 | 138，090 | 18，701，502 | 11，904，512 | 135.43 | 86.21 | 63．7\％ |
| 1／1／07－12／31／07 | 12 | 7／1／07 | 373，960 | 55，963，352 | 41，076，857 | 149.65 | 109.84 | 73．4\％ |
| 1／1／08－12／31／08 | 12 | 7／1／08 | 553，748 | 94，793，575 | 67，778，373 | 171.19 | 122.40 | 71．5\％ |
| 1／1／09－7／31／09 | 7 | 4／15／09 | 408，555 | 74，460，809 | 55，300，317 | 182.25 | 135.36 | 74．3\％ |
|  |  |  | 1，474，353 | 243，919，238 | 176，060，059 | 165.44 | 119.42 | 72．2\％ |
| 8／1／08－7／31／09 | 12 | 2／1／09 | 654，314 | 118，732，612 | 87，326，637 | 181.46 | 133.46 | 0.735 |



[^2]
## AHP Lifetime Loss Ratio Calculation

| Assumed |  |  |  |  |  |  | Total |  |  |  |  |  | Cumul APV Inc'd |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Aggregate Amts (\$) |  | PMPM Amounts |  | PMPM | Undisc. Inc'd | Present Values (APV) |  |  |  |  |
| \# | Claims | Mbr | Earned | Inc'd | Earned | Inc'd | Clms |  | Annua | (\$000) | Cumul | \$000) |  |
| Mos | Midpt | Months | Prem | Claims | Prem | Claims | Trend* | LR | Prem | Clms | Prem | Clms | LR |


| Actual Experience |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1 / 1 / 06-12 / 31 / 06$ | 12 | $7 / 1 / 06$ | 138,090 | $18,701,502$ | $11,904,512$ | 135.43 | 86.21 | $63.7 \%$ |
| $1 / 1 / 07-12 / 31 / 07$ | 12 | $7 / 1 / 07$ | 373,960 | $55,963,352$ | $41,076,857$ | 149.65 | 109.84 | $73.4 \%$ |
| $1 / 1 / 08-12 / 31 / 08$ | 12 | $7 / 1 / 08$ | 553,748 | $94,793,575$ | $67,778,373$ | 171.19 | 122.40 | $71.5 \%$ |
| $1 / 1 / 09-7 / 31 / 09$ | 7 | $4 / 15 / 09$ | 408,555 | $74,460,809$ | $55,300,317$ | 182.25 | 135.36 | $74.3 \%$ |
|  |  |  | $\mathbf{1 , 4 7 4 , 3 5 3}$ | $\mathbf{2 4 3 , 9 1 9 , 2 3 8}$ | $\mathbf{1 7 6 , 0 6 0 , 0 5 9}$ | $\mathbf{1 6 5 . 4 4}$ | $\mathbf{1 1 9 . 4 2}$ | $72.2 \%$ |
| $8 / 1 / 08-7 / 31 / 09$ | 12 | $2 / 1 / 09$ | 654,314 | $118,732,612$ | $87,326,637$ | 181.46 | 133.46 | 0.735 |



[^3]
## AHP Lifetime Loss Ratio Calculation




[^4]
## AHP Lifetime Loss Ratio Calculation




[^5]
## AHP Lifetime Loss Ratio Calculation

|  | Assumed |  |  |  |  |  |  | Total |  |  |  |  |  | Cumul APV Inc'd |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Aggregate Amts (\$) |  | PMPM Amounts |  | PMPM | Undisc. Inc'd LR | Present Values (APV) |  |  |  |  |
|  | \# | Claims | Mbr | Earned | Inc'd | Earned | Inc'd | Clms |  | Annual Amt | ts (\$000) | Cumulative (\$ | 00) |  |
|  | Mos | Midpt | Months | Prem | Claims | Prem | Claims | Trend* |  | Prem | Clms | Prem | ms | LR |
| Actual Experience |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1/1/06-12/31/06 | 12 | 8/14/06 | 138,090 | 18,701,502 | 11,904,512 | 135.43 | 86.21 |  | 63.7\% | 22,642 | 14,384 | 22,642 | 14,384 | 63.5\% |
| 1/1/07-12/31/07 | 12 | 7/16/07 | 373,960 | 55,963,352 | 41,076,857 | 149.65 | 109.84 |  | 73.4\% | 64,782 | 47,453 | 87,424 | 61,837 | 70.7\% |
| 1/1/08-12/31/08 | 12 | 7/8/08 | 553,748 | 94,793,575 | 67,778,373 | 171.19 | 122.40 |  | 71.5\% | 104,617 | 74,650 | 192,041 | 136,487 | 71.1\% |
| 1/1/09 - 7/31/09 | 7 | 4/19/09 | 408,555 | 74,460,809 | 55,300,317 | 182.25 | 135.36 |  | 74.3\% | 79,102 | 58,628 | 271,143 | 195,115 | 72.0\% |
|  |  |  | 1,474,353 | 243,919,238 | 176,060,059 | 165.44 | 119.42 |  | 72.2\% | 271,143 | 195,115 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 72.0\% | APV LLR: Historical Yrs Only: |  |  |
| 8/1/08 - 7/31/09 | 12 | 2/8/09 | 654,314 | 118,732,612 | 87,326,637 | 181.46 | 133.46 |  | 0.735 |  |  |  |  |  |
| Projected Experience |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8/1/09 - 6/30/10 | 11 | 1/15/10 | 730,896 | 155,383,533 | 109,002,905 | 212.59 | 149.14 | 1.117 | 70.2\% | 159,192 | 111,447 | 430,334 | 306,562 | 71.2\% |
| 7/1/10-6/30/11 | 12 | 12/17/10 | 653,331 | 158,566,516 | 112,621,247 | 242.70 | 172.38 | 1.156 | 71.0\% | 155,335 | 110,102 | 585,669 | 416,664 | 71.1\% |
| 7/1/11-6/30/12 | 12 | 12/17/11 | 426,057 | 121,422,722 | 88,028,456 | 284.99 | 206.61 | 1.199 | 72.5\% | 113,283 | 81,960 | 698,952 | 498,625 | 71.3\% |
| 7/1/12 - 6/30/13 | 12 | 12/17/12 | 277,846 | 90,111,190 | 68,047,259 | 324.32 | 244.91 | 1.185 | 75.5\% | 80,062 | 60,336 | 779,014 | 558,961 | 71.8\% |
| 7/1/13-6/30/14 | 12 | 12/17/13 | 181,201 | 66,877,110 | 51,905,088 | 369.08 | 286.45 | 1.170 | 77.6\% | 56,592 | 43,833 | 835,606 | 602,794 | 72.1\% |
| 7/1/14-6/30/15 | 12 | 12/17/14 | 118,172 | 49,284,420 | 39,276,024 | 417.06 | 332.36 | 1.160 | 79.7\% | 39,720 | 31,590 | 875,326 | 634,383 | 72.5\% |
| 7/1/15 - 6/30/16 | 12 | 12/17/15 | 77,072 | 36,257,742 | 29,585,630 | 470.44 | 383.87 | 1.155 | 81.6\% | 27,830 | 22,663 | 903,156 | 657,046 | 72.7\% |
| 7/1/16 - 6/30/17 | 12 | 12/17/16 | $\begin{gathered} \text { 50,265 } \\ \mathbf{2 , 5 1 4 , 8 4 0} \end{gathered}$ | $\begin{gathered} 26,673,413 \\ 704,576,646 \end{gathered}$ | $\begin{gathered} 22,198,122 \\ 520,664,731 \end{gathered}$ | $\begin{aligned} & 530.66 \\ & 280.17 \end{aligned}$ | $\begin{aligned} & 441.62 \\ & 207.04 \end{aligned}$ | 1.150 | 83.2\% | $\begin{array}{r} 19,497 \\ 651,511 \end{array}$ | $\begin{array}{r} 16,193 \\ 478,124 \\ \hline \end{array}$ | 922,653 | 673,239 | 72.97\% |
|  |  |  |  |  |  |  |  |  | 73.9\% |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 73.4\% | Future Yrs |  |  |
| Total All Years |  |  | 3,989,193 | 948,495,884 | 696,724,790 | 237.77 | 174.65 | $73.5 \%$w/out discounting |  | 922,653 | 673,239 |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 73.0\% | Total Lifetime: |  |  |  |

[^6]

| Detail for Adjustments to Ye <br> Adj to Yr-1 Clms Duration (Yr-1 vs. Base Period) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Dist'n of Mbr Months by Duration |  |  | Claims Duration Factor |  |  |  |
| 0022800339 |  |  | By | 00228 | 00339 | 00339 |
| Dur. | Base* | Year 1 | Dur. | Base* | Yr-1 | $\begin{gathered} \text { /00228 } \\ \text { Ratio } \end{gathered}$ |
| 1 | 52\% | 100\% | 0.78 |  |  | Applied |
| 2 | 30\% | 0\% | 0.81 |  |  |  |
| 3 | 16\% | 0\% | 0.91 |  |  |  |
| 4 |  | 0\% | 0.95 |  |  |  |
| 5 |  | 0\% | 1.00 |  |  |  |
| 6 | 0\% | 0\% | 1.02 |  |  |  |
| Wtd Avgs per Mbr Mo Distn: |  |  |  | 0.812 | 0.777 | 0.956 |


| Adj for Plan-specific LR Experience |  |
| :--- | :---: |
| 00028/354 Base Per Exper: $8 / 1 / 08-7 / 31 / 09$ |  |
|  | Inc'd <br>  <br>  <br>  <br> AR |
|  | $73.4 \%$ |
| Excl. MC Plans 1500+ | $67.9 \%$ |
| Ratio Applied to LR: | 0.9246 |
| Ratio Applied: | $\mathbf{0 . 9 2 5}$ |
|  |  |

Prem Dist'n by Area (8/1/08-7/31/09):
Add'I Area Factors (changes) included in 00339 Rates

| RA-1 | RA-2 | RA-3 | RA-4 | RA-5 | RA-6 | RA-7 | RA-8 | RA-9 | Wtd Avg |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $21 \%$ | $10 \%$ | $7 \%$ | $20 \%$ | $11 \%$ | $16 \%$ | $8 \%$ | $6 \%$ | $1 \%$ | $100 \%$ |
| 1.11 | 0.95 | 0.90 | 1.05 | 1.00 | 1.08 | 0.96 | 1.20 | 1.00 | 1.043 |

Exhibit D
LLR Scenario Testing for PF-00339
Assumptions by Scenario

|  | Scenario 1 (Original Assumptions) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Relative |  |  |  |  |  |
|  |  | Prem | Net | \$ Prem |  |  |
|  |  | Trend | Prem | from | Normal |  |
|  | Policy | /Rate | Lapse | New | Clms | Clms |
| Year | Lapse | Incr | by Yr | Sales | Trend | Dur. |
| 1 |  |  |  | 1000 |  | 0.78 |
| 2 | n/a | n/a | 21\% | 1000 | n/a | 0.81 |
| 3 | n/a | n/a | 19\% | 1000 | n/a | 0.91 |
| 4 | n/a | n/a | 16\% | 1000 | n/a | 0.95 |
| 5 | n/a | n/a | 12\% | 1000 | n/a | 1.00 |
| 6 | n/a | n/a | 12\% | 1000 | n/a | 1.02 |
| 7 | n/a | n/a | 12\% | 1000 | n/a | 1.06 |
| 8 | n/a | n/a | 12\% | 1000 | n/a | 1.10 |
| 9 | n/a | n/a | 12\% | 1000 | n/a | 1.10 |
| 10 | $\mathrm{n} / \mathrm{a}$ | n/a | 12\% | 1000 | n/a | 1.10 |
| 11 |  |  |  |  |  |  |
|  | Discount Rate: |  |  |  | 5\% |  |
|  | Add'l Mo's Dscnt for Clms: |  |  |  | 0.0 |  |
|  | Year-1 Starting LR: |  |  |  | 63.7\% |  |


| Scenario 2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Prem | Net | Relative <br> Rate | Prem |
| Policy | Incr. | Lapse | New | Normal |
| Lapse | (Trend) | by Yr | Sales | Trend |
|  |  |  |  |  |
|  |  |  | $\$ 1,000$ |  |
| $30 \%$ | $12.8 \%$ | $21 \%$ | $\$ 1,128$ | $12.8 \%$ |
| $28 \%$ | $12.8 \%$ | $19 \%$ | $\$ 1,272$ | $12.8 \%$ |
| $26 \%$ | $12.8 \%$ | $16 \%$ | $\$ 1,435$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 1,619$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 1,826$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 2,060$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 2,324$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 2,621$ | $12.8 \%$ |
| $22 \%$ | $12.8 \%$ | $12 \%$ | $\$ 2,957$ | $12.8 \%$ |
|  |  |  | $\$ 0$ |  |
| Discount Rate: |  |  | $5 \%$ |  |
| Add'l Mo's Dscnt for Clms: | 0.5 |  |  |  |
| Year-1 | Starting LR: |  | $59.7 \%$ |  |


| Scenario 3 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Relative |  |  |  |  |
| Policy Lapse | Prem <br> Rate Incr. (Trend) | Net <br> Prem <br> Lapse <br> by Yr | \$Prem <br> from <br> New <br> Sales | Normal <br> Clms <br> Trend |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | \$1,000 |  |
| 30\% | 12.8\% | 21\% | \$1,128 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$1,272 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$1,435 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$1,619 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$1,826 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$2,060 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$2,324 | 12.8\% |
| 28\% | 12.8\% | 19\% | \$2,621 | 12.8\% |
| 28\% | 12.8\% | 19\% | $\begin{gathered} \$ 2,957 \\ \$ 0 \end{gathered}$ | 12.8\% |
| Discount Rate: |  |  |  | 5\% |
| Add'l Mo's Dscnt for Clms: |  |  |  | 0.5 |
| Year-1 Starting LR: |  |  |  | 59.7\% |


| Scenarios 4 \& 5 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Prem | Net | Relative |  |
| Rate | Prem | from | Normal |  |
| Policy | Incr. | Lapse | New | Clms |
| Lapse | (Trend) | by Yr | Sales | Trend |
|  |  |  |  |  |
|  |  |  | $\$ 1,000$ |  |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 1,128$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 1,272$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 1,435$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 1,619$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 1,826$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 2,060$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 2,324$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 2,621$ | $12.8 \%$ |
| $35 \%$ | $12.8 \%$ | $27 \%$ | $\$ 2,957$ | $12.8 \%$ |
|  |  |  | $\$ 0$ |  |
| Discount Rate: |  |  | $5 \%$ |  |
| Add'I Mo's Dscnt for CIms: | 0.5 |  |  |  |
| Year-1 | Starting | LR: |  | $59.7 \%$ |

Notes:
AHP Modeling of Policy Lapse rates \& Claims Duration factors is applied by policy duration.
AHP Modeling of premium rate increases \& normal claims trend is applied by projection year
AHP Scenarios 2-3 apply the same Claims Duration factors as Scenario 1 (original Aetna projection)
Assumed policy lapse rates and rate increases are applied at policy anniversary.
Projections assume no new sales after Year 10

## Original Aetna Projection:

Projection was truncated at 10 Years
Effectively, the original projection applied a net premium lapse assumption, by duration, at the rates shown.
Trends for Prem Rate increases \& Claims were not explicitly included (effectively equal, with the prem lapse rates effectively net of any rate increases)

## AHP Lifetime Loss Ratio Calculation



## AHP Lifetime Loss Ratio Calculation

| Durational  <br> Assumptions  <br> Pol.  <br> Dur.  <br> Dolicy  |  |  |
| :---: | :---: | :---: |
| Lapse | Clms |  |
|  |  | Dur. |
| 1 |  | 0.78 |
| 2 | $30 \%$ | 0.81 |
| 3 | $28 \%$ | 0.91 |
| 4 | $26 \%$ | 0.95 |
| 5 | $22 \%$ | 1.00 |
| 6 | $22 \%$ | 1.02 |
| 7 | $22 \%$ | 1.06 |
| 8 | $22 \%$ | 1.10 |
| 9 | $22 \%$ | 1.10 |
| 10 | $22 \%$ | 1.10 |
| 11 | $22 \%$ | 1.10 |
| 12 | $22 \%$ | 1.10 |
| 13 | $22 \%$ | 1.10 |
| 14 | $22 \%$ | 1.10 |
| 15 | $22 \%$ | 1.10 |
| 16 | $22 \%$ | 1.10 |
| 17 | $22 \%$ | 1.10 |
| 18 | $22 \%$ | 1.10 |
| 19 | $22 \%$ | 1.10 |
| 20 | $22 \%$ | 1.10 |
| 21 | $22 \%$ | 1.10 |
| 22 | $22 \%$ | 1.10 |
| 23 | $22 \%$ | 1.10 |
| 24 | $22 \%$ | 1.10 |
| 25 | $22 \%$ | 1.10 |
|  |  |  |


| Assumptions by Proj. Year |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$Prem Prem |  |  |  | Single Cohort of N.Sales |  |  |  |  |  |  |
| Proj | from | Rate | Normal Clms <br> Trend | Proj Amts (\$) |  | Undisc. Inc'd | Present Values (APV) |  |  |  |
|  | New | Incr. |  | Earned | Inc'd |  | Annual Amts |  | Cumula |  |
| Year | Sales | (Trend) |  | Prem | Claims | LR | Prem Clms | Prem | Clms | LLR |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) |  | Undisc. | Present Values (APV) |  |  |  |
|  | Earned | Inc'd | Inc'd | Annual Amts | Cumulative |  |
|  | Prem | Claims | LR | Prem | Clms | Prem |
|  |  |  | Clms | LLR |  |  |


| 1 | 1,000 |  |  | 1,000 | 597 | 59.7\% | 978 | 583 | 978 | 583 | 59.6\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | 1,128 | 12.8\% | 12.8\% | 790 | 494 | 62.5\% | 736 | 459 | 1,714 | 1,042 | 60.8\% |
| 3 | 1,272 | 12.8\% | 12.8\% | 640 | 446 | 69.6\% | 568 | 394 | 2,281 | 1,436 | 62.9\% |
| 4 | 1,435 | 12.8\% | 12.8\% | 538 | 393 | 73.1\% | 454 | 331 | 2,735 | 1,767 | 64.6\% |
| 5 | 1,619 | 12.8\% | 12.8\% | 473 | 363 | 76.8\% | 381 | 292 | 3,116 | 2,059 | 66.1\% |
| 6 | 1,826 | 12.8\% | 12.8\% | 416 | 328 | 78.7\% | 319 | 251 | 3,435 | 2,310 | 67.2\% |
| 7 | 2,060 | 12.8\% | 12.8\% | 366 | 299 | 81.5\% | 267 | 217 | 3,702 | 2,527 | 68.3\% |
| 8 | 2,324 | 12.8\% | 12.8\% | 322 | 273 | 84.8\% | 224 | 190 | 3,926 | 2,717 | 69.2\% |
| 9 | 2,621 | 12.8\% | 12.8\% | 284 | 241 | 84.8\% | 188 | 159 | 4,114 | 2,876 | 69.9\% |
| 10 | 2,957 | 12.8\% | 12.8\% | 250 | 212 | 84.8\% | 157 | 133 | 4,271 | 3,009 | 70.4\% |
| 11 | 0 | 12.8\% | 12.8\% | 220 | 186 | 84.8\% | 132 | 112 | 4,403 | 3,121 | 70.9\% |
| 12 | 0 | 12.8\% | 12.8\% | 193 | 164 | 84.8\% | 111 | 94 | 4,514 | 3,214 | 71.2\% |
| 13 | 0 | 12.8\% | 12.8\% | 170 | 144 | 84.8\% | 93 | 78 | 4,606 | 3,293 | 71.5\% |
| 14 | 0 | 12.8\% | 12.8\% | 150 | 127 | 84.8\% | 78 | 66 | 4,684 | 3,358 | 71.7\% |
| 15 | 0 | 12.8\% | 12.8\% | 132 | 112 | 84.8\% | 65 | 55 | 4,749 | 3,413 | 71.9\% |
| 16 | 0 | 12.8\% | 12.8\% | 116 | 98 | 84.8\% | 55 | 46 | 4,803 | 3,460 | 72.0\% |
| 17 | 0 | 12.8\% | 12.8\% | 102 | 87 | 84.8\% | 46 | 39 | 4,849 | 3,498 | 72.1\% |
| 18 | 0 | 12.8\% | 12.8\% | 90 | 76 | 84.8\% | 38 | 32 | 4,887 | 3,531 | 72.2\% |
| 19 | 0 | 12.8\% | 12.8\% | 79 | 67 | 84.8\% | 32 | 27 | 4,920 | 3,558 | 72.3\% |
| 20 | 0 | 12.8\% | 12.8\% | 70 | 59 | 84.8\% | 27 | 23 | 4,946 | 3,581 | 72.4\% |
| 21 | 0 | 12.8\% | 12.8\% | 61 | 52 | 84.8\% | 23 | 19 | 4,969 | 3,600 | 72.4\% |
| 22 | 0 | 12.8\% | 12.8\% | 54 | 46 | 84.8\% | 19 | 16 | 4,988 | 3,616 | 72.5\% |
| 23 | 0 | 12.8\% | 12.8\% | 47 | 40 | 84.8\% | 16 | 13 | 5,004 | 3,629 | 72.5\% |
| 24 | 0 | 12.8\% | 12.8\% | 42 | 35 | 84.8\% | 13 | 11 | 5,017 | 3,640 | 72.6\% |
| 25 | 0 | 12.8\% | 12.8\% | 37 | 31 | 84.8\% | 11 | 9 | 5,028 | 3,650 | 72.6\% |
| Total All Years |  |  |  | (before present values) |  |  | Present Value Basis |  |  |  |  |
|  |  |  |  | 6,640 | 4,970 | 75\% | 5,028 | 3,650 | APV LLR: |  | 72.6\% |


| 1,000 | 597 | $60 \%$ | 978 | 583 | 978 | 583 | $59.6 \%$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1,918 | 1,167 | $61 \%$ | 1,786 | 1,085 | 2,764 | 1,667 | $60.3 \%$ |
| 2,803 | 1,762 | $63 \%$ | 2,487 | 1,560 | 5,251 | 3,227 | $61.5 \%$ |
| 3,700 | 2,381 | $64 \%$ | 3,125 | 2,007 | 8,376 | 5,234 | $62.5 \%$ |
| 4,646 | 3,049 | $66 \%$ | 3,738 | 2,448 | 12,114 | 7,682 | $63.4 \%$ |
| 5,657 | 3,767 | $67 \%$ | 4,335 | 2,880 | 16,449 | 10,562 | $64.2 \%$ |
| 6,748 | 4,548 | $67 \%$ | 4,924 | 3,312 | 21,373 | 13,874 | $64.9 \%$ |
| 7,934 | 5,403 | $68 \%$ | 5,514 | 3,747 | 26,886 | 17,621 | $65.5 \%$ |
| 9,233 | 6,335 | $69 \%$ | 6,111 | 4,185 | 32,997 | 21,806 | $66.1 \%$ |
| 10,664 | 7,358 | $69 \%$ | 6,722 | 4,629 | 39,720 | 26,435 | $66.6 \%$ |
| 8,914 | 6,495 | $73 \%$ | 5,352 | 3,892 | 45,071 | 30,326 | $67.3 \%$ |
| 7,614 | 5,844 | $77 \%$ | 4,353 | 3,335 | 49,425 | 33,661 | $68.1 \%$ |
| 6,625 | 5,250 | $79 \%$ | 3,607 | 2,853 | 53,032 | 36,514 | $68.9 \%$ |
| 5,830 | 4,739 | $81 \%$ | 3,023 | 2,453 | 56,055 | 38,967 | $69.5 \%$ |
| 5,130 | 4,245 | $83 \%$ | 2,534 | 2,092 | 58,589 | 41,059 | $70.1 \%$ |
| 4,514 | 3,794 | $84 \%$ | 2,124 | 1,781 | 60,712 | 42,840 | $70.6 \%$ |
| 3,973 | 3,370 | $85 \%$ | 1,780 | 1,507 | 62,492 | 44,347 | $71.0 \%$ |
| 3,496 | 2,966 | $85 \%$ | 1,492 | 1,263 | 63,984 | 45,610 | $71.3 \%$ |
| 3,076 | 2,610 | $85 \%$ | 1,250 | 1,058 | 65,234 | 46,668 | $71.5 \%$ |
| 2,707 | 2,297 | $85 \%$ | 1,048 | 887 | 66,281 | 47,555 | $71.7 \%$ |
| 2,382 | 2,021 | $85 \%$ | 878 | 743 | 67,159 | 48,299 | $71.9 \%$ |
| 2,097 | 1,779 | $85 \%$ | 736 | 623 | 67,895 | 48,922 | $72.1 \%$ |
| 1,845 | 1,565 | $85 \%$ | 617 | 522 | 68,512 | 49,444 | $72.2 \%$ |
| 1,624 | 1,377 | $85 \%$ | 517 | 438 | 69,029 | 49,882 | $72.3 \%$ |
| 1,429 | 1,212 | $85 \%$ | 433 | 367 | 69,462 | 50,248 | $72.3 \%$ |
| before present values) |  | Present Value Basis |  |  |  |  |  |
| 115560 | 85933 | $74 \%$ | 69462 | 50248 |  | APV $5 L R:$ | $72.3 \%$ |

## AHP Lifetime Loss Ratio Calculation

| Durational |  |  |
| :---: | :---: | :---: |
| Assumptions |  |  |
| Pol. | Policy | Clms |
| Dur. | Lapse | Dur. |
|  |  |  |
| 1 |  | 0.78 |
| 2 | $30 \%$ | 0.81 |
| 3 | $28 \%$ | 0.91 |
| 4 | $28 \%$ | 0.95 |
| 5 | $28 \%$ | 1.00 |
| 6 | $28 \%$ | 1.02 |
| 7 | $28 \%$ | 1.06 |
| 8 | $28 \%$ | 1.10 |
| 9 | $28 \%$ | 1.10 |
| 10 | $28 \%$ | 1.10 |
| 11 | $28 \%$ | 1.10 |
| 12 | $28 \%$ | 1.10 |
| 13 | $28 \%$ | 1.10 |
| 14 | $28 \%$ | 1.10 |
| 15 | $28 \%$ | 1.10 |
| 16 | $28 \%$ | 1.10 |
| 17 | $28 \%$ | 1.10 |
| 18 | $28 \%$ | 1.10 |
| 19 | $28 \%$ | 1.10 |
| 20 | $28 \%$ | 1.10 |
| 21 | $28 \%$ | 1.10 |
| 22 | $28 \%$ | 1.10 |
| 23 | $28 \%$ | 1.10 |
| 24 | $28 \%$ | 1.10 |
| 25 | $28 \%$ | 1.10 |
|  |  |  |



| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. Inc'd LR | Present Values (APV) |  |  |
| Earned Inc'd |  | Annual Amts | Cumulativ |  |
| Prem Claims |  | Prem Clms | Clms | LLR |


| 1 | 1,000 |  |  |
| :---: | :---: | :---: | :---: |
| 2 | 1,128 | $12.8 \%$ | $12.8 \%$ |
| 3 | 1,272 | $12.8 \%$ | $12.8 \%$ |
| 4 | 1,435 | $12.8 \%$ | $12.8 \%$ |
| 5 | 1,619 | $12.8 \%$ | $12.8 \%$ |
| 6 | 1,826 | $12.8 \%$ | $12.8 \%$ |
| 7 | 2,060 | $12.8 \%$ | $12.8 \%$ |
| 8 | 2,324 | $12.8 \%$ | $12.8 \%$ |
| 9 | 2,621 | $12.8 \%$ | $12.8 \%$ |
| 10 | 2,957 | $12.8 \%$ | $12.8 \%$ |
| 11 | 0 | $12.8 \%$ | $12.8 \%$ |
| 12 | 0 | $12.8 \%$ | $12.8 \%$ |
| 13 | 0 | $12.8 \%$ | $12.8 \%$ |
| 14 | 0 | $12.8 \%$ | $12.8 \%$ |
| 15 | 0 | $12.8 \%$ | $12.8 \%$ |
| 16 | 0 | $12.8 \%$ | $12.8 \%$ |
| 17 | 0 | $12.8 \%$ | $12.8 \%$ |
| 18 | 0 | $12.8 \%$ | $12.8 \%$ |
| 19 | 0 | $12.8 \%$ | $12.8 \%$ |
| 20 | 0 | $12.8 \%$ | $12.8 \%$ |
| 21 | 0 | $12.8 \%$ | $12.8 \%$ |
| 22 | 0 | $12.8 \%$ | $12.8 \%$ |
| 23 | 0 | $12.8 \%$ | $12.8 \%$ |
| 24 | 0 | $12.8 \%$ | $12.8 \%$ |
| 25 | 0 | $12.8 \%$ | $12.8 \%$ |


| 1,000 | 597 | 59.7\% | 978 | 583 | 978 | 583 | 59.6\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 790 | 494 | 62.5\% | 736 | 459 | 1,714 | 1,042 | 60.8\% |
| 640 | 446 | 69.6\% | 568 | 394 | 2,281 | 1,436 | 62.9\% |
| 518 | 379 | 73.1\% | 438 | 319 | 2,719 | 1,755 | 64.6\% |
| 420 | 323 | 76.8\% | 338 | 259 | 3,057 | 2,014 | 65.9\% |
| 340 | 268 | 78.7\% | 261 | 205 | 3,317 | 2,219 | 66.9\% |
| 275 | 225 | 81.5\% | 201 | 164 | 3,518 | 2,383 | 67.7\% |
| 223 | 189 | 84.8\% | 155 | 131 | 3,673 | 2,514 | 68.4\% |
| 181 | 153 | 84.8\% | 120 | 101 | 3,793 | 2,615 | 68.9\% |
| 146 | 124 | 84.8\% | 92 | 78 | 3,885 | 2,693 | 69.3\% |
| 119 | 101 | 84.8\% | 71 | 60 | 3,957 | 2,754 | 69.6\% |
| 96 | 81 | 84.8\% | 55 | 46 | 4,011 | 2,800 | 69.8\% |
| 78 | 66 | 84.8\% | 42 | 36 | 4,054 | 2,836 | 70.0\% |
| 63 | 53 | 84.8\% | 33 | 28 | 4,086 | 2,864 | 70.1\% |
| 51 | 43 | 84.8\% | 25 | 21 | 4,112 | 2,885 | 70.2\% |
| 41 | 35 | 84.8\% | 19 | 16 | 4,131 | 2,901 | 70.2\% |
| 33 | 28 | 84.8\% | 15 | 13 | 4,146 | 2,914 | 70.3\% |
| 27 | 23 | 84.8\% | 12 | 10 | 4,158 | 2,924 | 70.3\% |
| 22 | 19 | 84.8\% | 9 | 8 | 4,167 | 2,931 | 70.4\% |
| 18 | 15 | 84.8\% | 7 | 6 | 4,174 | 2,937 | 70.4\% |
| 14 | 12 | 84.8\% | 5 | 4 | 4,179 | 2,942 | 70.4\% |
| 12 | 10 | 84.8\% | 4 | 3 | 4,183 | 2,945 | 70.4\% |
| 9 | 8 | 84.8\% | 3 | 3 | 4,186 | 2,948 | 70.4\% |
| 8 | 6 | 84.8\% | 2 | 2 | 4,189 | 2,950 | 70.4\% |
| 6 | 5 | 84.8\% | 2 | 2 | 4,190 | 2,952 | 70.4\% |
| (before present values) |  |  | Present Value Basis |  |  |  |  |
| 5,131 | 3,704 | 72\% | 4,190 | 2,952 |  | LLR: | 70.4\% |


| 1,000 | 597 | $60 \%$ | 978 | 583 | 978 | 583 | $59.6 \%$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1,918 | 1,167 | $61 \%$ | 1,786 | 1,085 | 2,764 | 1,667 | $60.3 \%$ |
| 2,803 | 1,762 | $63 \%$ | 2,487 | 1,560 | 5,251 | 3,227 | $61.5 \%$ |
| 3,681 | 2,367 | $64 \%$ | 3,109 | 1,995 | 8,360 | 5,222 | $62.5 \%$ |
| 4,572 | 2,992 | $65 \%$ | 3,678 | 2,402 | 12,038 | 7,625 | $63.3 \%$ |
| 5,497 | 3,643 | $66 \%$ | 4,212 | 2,785 | 16,249 | 10,410 | $64.1 \%$ |
| 6,476 | 4,334 | $67 \%$ | 4,725 | 3,156 | 20,975 | 13,566 | $64.7 \%$ |
| 7,528 | 5,078 | $67 \%$ | 5,232 | 3,522 | 26,206 | 17,088 | $65.2 \%$ |
| 8,672 | 5,881 | $68 \%$ | 5,740 | 3,885 | 31,946 | 20,972 | $65.6 \%$ |
| 9,928 | 6,758 | $68 \%$ | 6,258 | 4,251 | 38,204 | 25,223 | $66.0 \%$ |
| 7,983 | 5,733 | $72 \%$ | 4,792 | 3,435 | 42,997 | 28,658 | $66.7 \%$ |
| 6,466 | 4,901 | $76 \%$ | 3,697 | 2,797 | 46,694 | 31,454 | $67.4 \%$ |
| 5,238 | 4,109 | $78 \%$ | 2,852 | 2,233 | 49,546 | 33,687 | $68.0 \%$ |
| 4,242 | 3,424 | $81 \%$ | 2,200 | 1,772 | 51,746 | 35,459 | $68.5 \%$ |
| 3,436 | 2,830 | $82 \%$ | 1,697 | 1,395 | 53,443 | 36,854 | $69.0 \%$ |
| 2,783 | 2,335 | $84 \%$ | 1,309 | 1,096 | 54,753 | 37,950 | $69.3 \%$ |
| 2,255 | 1,913 | $85 \%$ | 1,010 | 855 | 55,763 | 38,805 | $69.6 \%$ |
| 1,826 | 1,549 | $85 \%$ | 779 | 660 | 56,542 | 39,465 | $69.8 \%$ |
| 1,479 | 1,255 | $85 \%$ | 601 | 509 | 57,143 | 39,974 | $70.0 \%$ |
| 1,198 | 1,017 | $85 \%$ | 464 | 393 | 57,607 | 40,367 | $70.1 \%$ |
| 971 | 823 | $85 \%$ | 358 | 303 | 57,964 | 40,669 | $70.2 \%$ |
| 786 | 667 | $85 \%$ | 276 | 234 | 58,240 | 40,903 | $70.2 \%$ |
| 637 | 540 | $85 \%$ | 213 | 180 | 58,453 | 41,083 | $70.3 \%$ |
| 5516 | 438 | $85 \%$ | 164 | 139 | 58,617 | 41,222 | $70.3 \%$ |
| 418 | 354 | $85 \%$ | 127 | 107 | 58,744 | 41,330 | $70.4 \%$ |
| (before present values) |  | Present Value Basis |  |  |  |  |  |
| 92309 | 66466 | $72 \%$ | 58744 | 41330 |  | APV LLR: | $70.4 \%$ |

## AHP Lifetime Loss Ratio Calculation



| Assumptions by Proj. Year |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| \$Prem |  |  |  | Prem |
| from | Rate | Normal |  |  |
| Proj | New | Incr. |  |  | Clms


| Single Cohort of N.Sales |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) |  | Undisc. | Present Values (APV) |  |  |
|  | Earned | Inc'd | Inc'd | Annual Amts | Cumulative |
|  | Prem | Claims | LR | Prem | Clms |
|  |  |  | Prem | Clms | LLR |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. |  | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulative |


| 1 |  | 0.78 |
| :---: | :--- | :--- |
| 2 | $35 \%$ | 0.81 |
| 3 | $34 \%$ | 0.91 |
| 4 | $33 \%$ | 0.95 |
| 5 | $32 \%$ | 1.00 |
| 6 | $31 \%$ | 1.02 |
| 7 | $30 \%$ | 1.06 |
| 8 | $30 \%$ | 1.10 |
| 9 | $30 \%$ | 1.10 |
| 10 | $30 \%$ | 1.10 |
| 11 | $30 \%$ | 1.10 |
| 12 | $30 \%$ | 1.10 |
| 13 | $30 \%$ | 1.10 |
| 14 | $30 \%$ | 1.10 |
| 15 | $30 \%$ | 1.10 |
| 16 | $30 \%$ | 1.10 |
| 17 | $30 \%$ | 1.10 |
| 18 | $30 \%$ | 1.10 |
| 19 | $30 \%$ | 1.10 |
| 20 | $30 \%$ | 1.10 |
| 21 | $30 \%$ | 1.10 |
| 22 | $30 \%$ | 1.10 |
| 23 | $30 \%$ | 1.10 |
| 24 | $30 \%$ | 1.10 |
| 25 | $30 \%$ | 1.10 |

## AHP Lifetime Loss Ratio Calculation



| Assumptions by Proj. Year |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$Prem Prem |  | Prem |  | Single Cohort of N.Sales |  |  |  |  |  |  |  |
|  | from | Rate | Normal | Proj Amts (\$) |  | Undisc. Inc'd | Present Values (APV) |  |  |  |  |
| Proj | New | Incr. | Clms | Earned | Inc'd |  | Annu | Amts |  | Cumulat |  |
| Year | Sales | (Trend) | Trend | Prem | Claims | LR | Prem | Clms | Prem | Clms | LLR |


| Assumptions by Proj. Year |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$Prem Prem |  |  |  | Single Cohort of N.Sales |  |  |  |  |  |  |  |
|  | from | Rate | Normal | Proj Amts (\$) |  | Undisc. Inc'd | Present Values (APV) |  |  |  |  |
| Proj | New | Incr. | Clms | Earned | Inc'd |  | Annua | Amts |  | Cumulat |  |
| Year | Sales | (Trend) | Trend | Prem | Claims | LR | Prem | Clms | Prem | Clms | LLR |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) |  |  | Undisc. | Present Values (APV) |  |  |
|  | Earned | Inc'd | Inc'd | Annual Amts | Cumulative |  |
|  | Prem | Claims | LR | Prem | Clms | Prem |
|  |  |  |  | Clms | LLR |  |


| 1 |  | 0.79 |
| :---: | :---: | :---: |
| 2 | $35 \%$ | 1.00 |
| 3 | $34 \%$ | 1.06 |
| 4 | $33 \%$ | 1.12 |
| 5 | $32 \%$ | 1.15 |
| 6 | $31 \%$ | 1.18 |
| 7 | $30 \%$ | 1.19 |
| 8 | $30 \%$ | 1.19 |
| 9 | $30 \%$ | 1.19 |
| 10 | $30 \%$ | 1.19 |
| 11 | $30 \%$ | 1.19 |
| 12 | $30 \%$ | 1.19 |
| 13 | $30 \%$ | 1.19 |
| 14 | $30 \%$ | 1.19 |
| 15 | $30 \%$ | 1.19 |
| 16 | $30 \%$ | 1.19 |
| 17 | $30 \%$ | 1.19 |
| 18 | $30 \%$ | 1.19 |
| 19 | $30 \%$ | 1.19 |
| 20 | $30 \%$ | 1.19 |
| 21 | $30 \%$ | 1.19 |
| 22 | $30 \%$ | 1.19 |
| 23 | $30 \%$ | 1.19 |
| 24 | $30 \%$ | 1.19 |
| 25 | $30 \%$ | 1.19 |


| 1 | 1,000 |  |  |
| :---: | :---: | :---: | :---: |
| 2 | 1,128 | $12.8 \%$ | $12.8 \%$ |
| 3 | 1,272 | $12.8 \%$ | $12.8 \%$ |
| 4 | 1,435 | $12.8 \%$ | $12.8 \%$ |
| 5 | 1,619 | $12.8 \%$ | $12.8 \%$ |
| 6 | 1,826 | $12.8 \%$ | $12.8 \%$ |
| 7 | 2,060 | $12.8 \%$ | $12.8 \%$ |
| 8 | 2,324 | $12.8 \%$ | $12.8 \%$ |
| 9 | 2,621 | $12.8 \%$ | $12.8 \%$ |
| 10 | 2,957 | $12.8 \%$ | $12.8 \%$ |
| 11 | 0 | $12.8 \%$ | $12.8 \%$ |
| 12 | 0 | $12.8 \%$ | $12.8 \%$ |
| 13 | 0 | $12.8 \%$ | $12.8 \%$ |
| 14 | 0 | $12.8 \%$ | $12.8 \%$ |
| 15 | 0 | $12.8 \%$ | $12.8 \%$ |
| 16 | 0 | $12.8 \%$ | $12.8 \%$ |
| 17 | 0 | $12.8 \%$ | $12.8 \%$ |
| 18 | 0 | $12.8 \%$ | $12.8 \%$ |
| 19 | 0 | $12.8 \%$ | $12.8 \%$ |
| 20 | 0 | $12.8 \%$ | $12.8 \%$ |
| 21 | 0 | $12.8 \%$ | $12.8 \%$ |
| 22 | 0 | $12.8 \%$ | $12.8 \%$ |
| 23 | 0 | $12.8 \%$ | $12.8 \%$ |
| 24 | 0 | $12.8 \%$ | $12.8 \%$ |
| 25 | 0 | $12.8 \%$ | $12.8 \%$ |


| 1,000 | 597 | 59.7\% | 978 | 583 | 978 | 583 | 59.6\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 733 | 553 | 75.5\% | 683 | 514 | 1,661 | 1,097 | 66.0\% |
| 546 | 437 | 80.1\% | 484 | 387 | 2,145 | 1,484 | 69.2\% |
| 413 | 348 | 84.4\% | 348 | 293 | 2,493 | 1,777 | 71.3\% |
| 316 | 275 | 86.9\% | 255 | 221 | 2,748 | 1,998 | 72.7\% |
| 246 | 218 | 88.7\% | 189 | 167 | 2,937 | 2,165 | 73.7\% |
| 194 | 175 | 89.8\% | 142 | 127 | 3,079 | 2,292 | 74.5\% |
| 154 | 138 | 89.8\% | 107 | 96 | 3,185 | 2,388 | 75.0\% |
| 121 | 109 | 89.8\% | 80 | 72 | 3,266 | 2,460 | 75.3\% |
| 96 | 86 | 89.8\% | 60 | 54 | 3,326 | 2,514 | 75.6\% |
| 76 | 68 | 89.8\% | 45 | 41 | 3,371 | 2,554 | 75.8\% |
| 60 | 54 | 89.8\% | 34 | 31 | 3,405 | 2,585 | 75.9\% |
| 47 | 42 | 89.8\% | 26 | 23 | 3,431 | 2,608 | 76.0\% |
| 37 | 33 | 89.8\% | 19 | 17 | 3,450 | 2,625 | 76.1\% |
| 29 | 26 | 89.8\% | 15 | 13 | 3,465 | 2,638 | 76.1\% |
| 23 | 21 | 89.8\% | 11 | 10 | 3,476 | 2,648 | 76.2\% |
| 18 | 16 | 89.8\% | 8 | 7 | 3,484 | 2,655 | 76.2\% |
| 14 | 13 | 89.8\% | 6 | 6 | 3,490 | 2,661 | 76.2\% |
| 11 | 10 | 89.8\% | 5 | 4 | 3,495 | 2,665 | 76.3\% |
| 9 | 8 | 89.8\% | 3 | 3 | 3,498 | 2,668 | 76.3\% |
| 7 | 6 | 89.8\% | 3 | 2 | 3,501 | 2,671 | 76.3\% |
| 6 | 5 | 89.8\% | 2 | 2 | 3,503 | 2,672 | 76.3\% |
| 4 | 4 | 89.8\% | 1 | 1 | 3,504 | 2,674 | 76.3\% |
| 4 | 3 | 89.8\% | 1 | 1 | 3,505 | 2,675 | 76.3\% |
| 3 | 2 | 89.8\% | 1 | 1 | 3,506 | 2,675 | 76.3\% |
| (before present values) |  |  | Present Value Basis |  |  |  |  |
| 4,168 | 3,250 | 78\% | 3,506 | 2,675 |  | LLR: | 76.3\% |


| 1,000 | 597 | $60 \%$ | 978 | 583 | 978 | 583 | $59.6 \%$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1,861 | 1,227 | $66 \%$ | 1,733 | 1,140 | 2,711 | 1,723 | $63.5 \%$ |
| 2,645 | 1,821 | $69 \%$ | 2,346 | 1,612 | 5,058 | 3,334 | $65.9 \%$ |
| 3,396 | 2,402 | $71 \%$ | 2,869 | 2,025 | 7,927 | 5,359 | $67.6 \%$ |
| 4,148 | 2,984 | $72 \%$ | 3,337 | 2,396 | 11,263 | 7,755 | $68.9 \%$ |
| 4,925 | 3,585 | $73 \%$ | 3,773 | 2,741 | 15,037 | 10,496 | $69.8 \%$ |
| 5,750 | 4,218 | $73 \%$ | 4,196 | 3,072 | 19,232 | 13,568 | $70.5 \%$ |
| 6,639 | 4,896 | $74 \%$ | 4,614 | 3,396 | 23,846 | 16,964 | $71.1 \%$ |
| 7,610 | 5,632 | $74 \%$ | 5,037 | 3,720 | 28,883 | 20,683 | $71.6 \%$ |
| 8,680 | 6,438 | $74 \%$ | 5,471 | 4,050 | 34,355 | 24,734 | $72.0 \%$ |
| 6,532 | 5,340 | $82 \%$ | 3,921 | 3,199 | 38,276 | 27,932 | $73.0 \%$ |
| 4,982 | 4,232 | $85 \%$ | 2,849 | 2,415 | 41,124 | 30,347 | $73.8 \%$ |
| 3,847 | 3,358 | $87 \%$ | 2,095 | 1,825 | 43,219 | 32,172 | $74.4 \%$ |
| 3,000 | 2,660 | $89 \%$ | 1,556 | 1,377 | 44,775 | 33,548 | $74.9 \%$ |
| 2,359 | 2,110 | $89 \%$ | 1,165 | 1,040 | 45,940 | 34,588 | $75.3 \%$ |
| 1,862 | 1,673 | $90 \%$ | 876 | 785 | 46,816 | 35,373 | $75.6 \%$ |
| 1,471 | 1,321 | $90 \%$ | 659 | 590 | 47,475 | 35,964 | $75.8 \%$ |
| 1,161 | 1,043 | $90 \%$ | 495 | 444 | 47,970 | 36,408 | $75.9 \%$ |
| 917 | 823 | $90 \%$ | 373 | 334 | 48,343 | 36,742 | $76.0 \%$ |
| 724 | 650 | $90 \%$ | 280 | 251 | 48,623 | 36,993 | $76.1 \%$ |
| 5572 | 513 | $90 \%$ | 211 | 189 | 48,833 | 37,182 | $76.1 \%$ |
| 451 | 405 | $90 \%$ | 158 | 142 | 48,992 | 37,324 | $76.2 \%$ |
| 356 | 320 | $90 \%$ | 119 | 107 | 49,111 | 37,430 | $76.2 \%$ |
| 281 | 253 | $90 \%$ | 90 | 80 | 49,201 | 37,511 | $76.2 \%$ |
| 222 | 200 | $90 \%$ | 67 | 60 | 49,268 | 37,571 | $76.3 \%$ |
| (before present values) |  | Present Value Basis |  |  |  |  |  |
| 75391 | 58699 | $78 \%$ | 49268 | 37571 |  | APV LLR: | $76.3 \%$ |

Exhibit F
Relationships by Plan and PF

| * Subtotal Excl MC1500: | 1,351,610 | 216,756,466 | 144,631,739 |  | 66.73\% | 627,448 | 108,934,828 | 73,633,240 |  | 67.59\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ** Subtotal 00354-Only: | 1,236,280 | 191,254,624 | 127,506,070 | 155 | 66.67\% | 595,291 | 100,413,102 | 68,185,739 | 169 | 67.91\% |
| Ratio 00354-Only / All |  |  |  |  | 0.930 |  |  |  |  | 0.925 |


|  |
| :--- |
| Footnotes: |
| $\quad$ * Subtotal excluding only the discontinued plan MC 1500 |
| ${ }^{* *}$ Subtotal excluding experience of all plans discontinued w/ 00354 policy form filing. |
| ${ }^{* * *}$ Ratio of $7 / 1 / 10$ (9/1/10) Rate Tables (M,37); Wtd Avg All Areas |

## Weighted Avgs using updated 00354 filing weights

Wtd Avg Ratio 00354 / 00028 for all Areas / Plans
vs Ratio Expected per Benefit Difference (Ambul)
Benefit-Adjusted Relative Premium Level (00354 vs 000280)


## Footnotes:

$\begin{array}{lllllllllll}\text { Prem Dist'n by Area (8/1/08-7/31/09): } & 21 \% & 10 \% & 7 \% & 20 \% & 11 \% & 16 \% & 8 \% & 6 \% & 1 \% & 100 \%\end{array}$ Note - in the above comparison of rates, for 00028 plans with both 5-year (SS) and single-age (SA) rates, the SA rates are used.

| 00028 - \$0 (First Dollar 30 - version 07012008); | 172 | 215 | 197 | 210 | 238 | 225 | 197 | 197 | 201 | 205 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00354-\$0 (First Dollar 30 - version 07012009); | 181 | 210 | 193 | 201 | 233 | 231 | 203 | 203 | 206 | 206 | 1.003 |
| 00028 - \$0 (First Dollar 40 - version 07012008); | 130 | 163 | 150 | 160 | 181 | 171 | 150 | 150 | 152 | 156 |  |
| 00354-\$0 (First Dollar 40-version 07012009); | 137 | 160 | 148 | 153 | 177 | 176 | 155 | 155 | 157 | 157 | 1.005 |
| 00028-\$2,500 (MC 2,500 plan - version 07012008); | 122 | 152 | 141 | 149 | 169 | 160 | 141 | 141 | 142 | 146 |  |
| 00354-\$2,500 (MC 2,500 plan - version 07012009); | 129 | 150 | 138 | 143 | 166 | 164 | 145 | 145 | 147 | 147 | 1.005 |
| 00028-\$5,000 (MC 5,000 plan - version 07012008); | 80 | 100 | 93 | 99 | 111 | 106 | 93 | 93 | 94 | 96 |  |
| 00354-\$5,000 (MC 5,000 plan - version 07012009); | 92 | 107 | 100 | 104 | 120 | 119 | 105 | 105 | 106 | 106 | 1.099 |
| 00028 - \$1,500 (MC Value 1,500 plan - version 07012008); | 113 | 140 | 129 | 137 | 156 | 147 | 129 | 129 | 131 | 134 |  |
| 00354-\$1,500 (MC Value 1,500 plan - version 07012009); | 119 | 137 | 127 | 132 | 153 | 151 | 133 | 133 | 136 | 135 | 1.005 |
| 00028 - \$2,500 (MC Value 2,500 plan - version 07012008); | 89 | 111 | 102 | 109 | 123 | 117 | 102 | 102 | 104 | 106 |  |
| 00354-\$2,500 (MC Value 2,500 plan - version 07012009); | 94 | 110 | 101 | 105 | 121 | 121 | 106 | 106 | 108 | 107 | 1.010 |
| 00028 - \$5,000 (MC Value 5,000 plan - version 07012008); | 75 | 95 | 87 | 93 | 104 | 100 | 87 | 87 | 88 | 90 |  |
| 00354-\$5,000 (MC Value 5,000 plan - version 07012009); | 80 | 94 | 86 | 90 | 103 | 103 | 90 | 90 | 91 | 91 | 1.012 |
| 00028-\$8,000 (MC Value 8,000 plan - version 07012008); | 54 | 68 | 62 | 67 | 75 | 72 | 62 | 62 | 63 | 65 |  |
| 00354-\$8,000 (MC Value 8,000 plan - version 07012009); | 58 | 68 | 62 | 65 | 75 | 75 | 65 | 65 | 66 | 66 | 1.021 |
| 00028 - \$3,000 (High Deductible MC 3,000 - version 07012008); | 111 | 138 | 128 | 136 | 154 | 145 | 128 | 128 | 129 | 133 |  |
| 00354-\$3,000 (High Deductible MC 3,000 - version 07012009); | 118 | 136 | 126 | 131 | 151 | 150 | 132 | 132 | 133 | 134 | 1.009 |
| 00028 - \$5,000 (High Deductible MC 5,000 - version 07012008); | 91 | 115 | 106 | 113 | 127 | 120 | 106 | 106 | 107 | 110 |  |
| 00354-\$5,000 (High Deductible MC 5,000 - version 07012009); | 97 | 113 | 104 | 109 | 125 | 124 | 109 | 109 | 111 | 111 | 1.009 |
| 00028 - \$1,250 (Preventive and Hospital Care \$1,250-version 0701* | 82 | 102 | 94 | 100 | 114 | 107 | 94 | 94 | 95 | 98 |  |
| 00354-\$1,250 (Preventive and Hospital Care \$1,250-version 0701́ | 87 | 101 | 93 | 97 | 112 | 111 | 97 | 97 | 99 | 99 | 1.012 |
| 00028 - \$3,000 (Preventive and Hospital Care \$3,000 - version 0701^ | 70 | 88 | 81 | 87 | 99 | 93 | 81 | 81 | 82 | 84 |  |
| 00354-\$3,000 (Preventive and Hospital Care \$3,000-version 0701́ | 75 | 87 | 80 | 84 | 97 | 96 | 84 | 84 | 86 | 85 | 1.012 |
| Wtd Avg All Plans: $\begin{aligned} & \text { Based on } 00354 \text { Prem w } \\ & \text { Based on } 00354 \text { Prem w }\end{aligned}$ | ase pe filin | resu |  |  |  |  |  |  |  |  | $\begin{aligned} & \hline 1.032 \\ & 1.033 \\ & \hline \end{aligned}$ |

## Footnotes:

$\begin{array}{lllllllllll}\text { Prem Dist'n by Area (8/1/08-7/31/09): } & 21 \% & 10 \% & 7 \% & 20 \% & 11 \% & 16 \% & 8 \% & 6 \% & 1 \% & 100 \%\end{array}$ Note - in the above comparison of rates, for 00028 plans with both 5-year (SS) and single-age (SA) rates, the SA rates are used.

Exhibit R-1
Updated 7/12/10

Exhibit H
Testing of Rate Relativities by Area
Comparison by Policy Form

## 00028

SA-FD 30
SA-FD 40
SA-MC 2500
SA-MC 5000
SA-Value 1500
SA-Value 2500
SA-Value 5000
SA-Value 8000
SA-HDHP 3000
SA-HDHP 5000
SA-PHC 1250
SA-PHC 3000
00354
First Dollar 30-7/1/09
First Dollar 40-7/1/09
MC 2500-7/1/09
MC 3500-7/1/09
MC 5000-7/1/09
MC 7500-7/1/09
Value 1500-7/1/09
Value 2500-7/1/09
Value 5000-7/1/09
Value 8000-7/1/09
High Ded MC 3000 (HSA Compat) - 7/1/09
High Ded MC 5000 (HSA Compat) - 7/1/09
Prevent. \& Hosp Care 1250-7/1/09
Prev \& Hosp Care 3000 (HSA Compat) - 7/1
MC 2500 with Limited Rx-7/1/09
MC 5000 with Limited Rx-7/1/09
MC 6500-7/1/09
MC 750 with CY Max - 7/1/09
MC 1500 with CY Max - 7/1/09
MC 2500 with CY Max - 7/1/09

00339
MC 3500 - v7012010
MC 5000 - v7012010
Value 2500 with 3 O.V. - v7012010
Value 8000 with 3 O.V. - v7012010
Value 2500 with 5 O.V. - v7012010
Value 8000 with 5 O.V.- v7012010
High Ded MC 3500 (HSA) - v702010
High Ded MC 5500 (HSA) - v7012010
Prevent \& Hosp Care 3000 (HSA) - v701201
MC 5000 with Limited Rx - v7012010
MC 6500 - v7012010
MC 7500 with Unlim PC + Dent - v7012010


| Area Factors Underlying $7 / 1 / 10(9 / 1 / 10)$ Rates <br> (using final/rounded rates; setting RA5 $=1.000)$ |
| :--- |
| RA1 RA2 RA3 RA4 RA5 RA6 RA7 RA8 RA9 |


| 207 | 251 | 226 | 245 | 278 | 271 | 237 | 237 | 241 | 0.74 | 0.90 | 0.81 | 0.88 | 1.00 | 0.97 | 0.85 | 0.85 | 0.87 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 156 | 191 | 172 | 187 | 211 | 206 | 181 | 180 | 183 | 0.74 | 0.91 | 0.82 | 0.89 | 1.00 | 0.98 | 0.86 | 0.85 | 0.87 |
| 147 | 178 | 161 | 174 | 197 | 193 | 170 | 170 | 171 | 0.75 | 0.90 | 0.82 | 0.88 | 1.00 | 0.98 | 0.86 | 0.86 | 0.87 |
| 96 | 117 | 106 | 116 | 130 | 128 | 112 | 112 | 113 | 0.74 | 0.90 | 0.82 | 0.89 | 1.00 | 0.98 | 0.86 | 0.86 | 0.87 |
| 136 | 164 | 148 | 160 | 182 | 177 | 155 | 155 | 157 | 0.75 | 0.90 | 0.81 | 0.88 | 1.00 | 0.97 | 0.85 | 0.85 | 0.86 |
| 107 | 130 | 117 | 127 | 144 | 141 | 123 | 123 | 125 | 0.74 | 0.90 | 0.81 | 0.88 | 1.00 | 0.98 | 0.85 | 0.85 | 0.87 |
| 90 | 111 | 100 | 109 | 122 | 120 | 105 | 105 | 106 | 0.74 | 0.91 | 0.82 | 0.89 | 1.00 | 0.98 | 0.86 | 0.86 | 0.87 |
| 65 | 80 | 71 | 78 | 88 | 87 | 75 | 75 | 76 | 0.74 | 0.91 | 0.81 | 0.89 | 1.00 | 0.99 | 0.85 | 0.85 | 0.86 |
| 134 | 161 | 147 | 159 | 180 | 175 | 154 | 154 | 155 | 0.74 | 0.89 | 0.82 | 0.88 | 1.00 | 0.97 | 0.86 | 0.86 | 0.86 |
| 110 | 134 | 121 | 132 | 148 | 144 | 128 | 127 | 129 | 0.74 | 0.91 | 0.82 | 0.89 | 1.00 | 0.97 | 0.86 | 0.86 | 0.87 |
| 99 | 119 | 108 | 117 | 133 | 129 | 113 | 113 | 114 | 0.74 | 0.89 | 0.81 | 0.88 | 1.00 | 0.97 | 0.85 | 0.85 | 0.86 |
| 84 | 103 | 93 | 102 | 116 | 112 | 97 | 97 | 98 | 0.72 | 0.89 | 0.80 | 0.88 | 1.00 | 0.97 | 0.84 | 0.84 | 0.84 |
|  |  |  |  |  |  | Avg: $\left.: \begin{array}{llllll}\mathbf{0 . 7 4} & \mathbf{0 . 9 0} & \mathbf{0 . 8 1} & \mathbf{0 . 8 8} & \mathbf{1 . 0 0} & \mathbf{0 . 9 8} \\ \mathbf{0 . 8 5} & \mathbf{0 . 8 5} & \mathbf{0 . 8 6}\end{array}\right]$ |  |  |  |  |  |  |  |  |  |  |  |


| 221 | 234 | 204 | 251 | 273 | 279 | 217 | 54 | 30 | 81 | 0.8 | 75 | 0.9 | 1.00 | 1.02 | 0.79 | 93 | 0.84 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 167 | 178 | 156 | 191 | 208 | 213 | 165 | 194 | 175 | 0.80 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 157 | 167 | 146 | 179 | 195 | 198 | 155 | 181 | 164 | 0.81 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 129 | 137 | 121 | 149 | 161 | 166 | 128 | 150 | 136 | 0.80 | 0.85 | 0.75 | 0.93 | 1.00 | 1.03 | 0.80 | 0.93 | 0.84 |
| 112 | 119 | 106 | 130 | 141 | 144 | 112 | 131 | 118 | 0.79 | 0.84 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 89 | 95 | 83 | 102 | 110 | 114 | 89 | 104 | 94 | 0.81 | 0.86 | 0.75 | 0.93 | 1.00 | 1.04 | 0.81 | 0.95 | 0.85 |
| 145 | 153 | 134 | 165 | 179 | 82 | 142 | 166 | 152 | 0.81 | 0.85 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.85 |
| 115 | 123 | 07 | 131 | 142 | 146 | 113 | 132 | 120 | 0.81 | 0.87 | 0.75 | 0.92 | 1.00 | 1.03 | 0.80 | 0.93 | 0.85 |
| 98 | 105 | 91 | 112 | 121 | 124 | 96 | 112 | 101 | 0.81 | 0.87 | 0.75 | 0.93 | 1.00 | 1.02 | 0.79 | 0.93 | 0.83 |
| 71 | 76 | 65 | 81 | 88 | 91 | 69 | 81 | 74 | 0.81 | 0.86 | 0.74 | 0.92 | 1.00 | 1.03 | 0.78 | 0.92 | 0.84 |
| 144 | 152 | 133 | 164 | 177 | 181 | 141 | 165 | 148 | 0.81 | 0.86 | 0.75 | 0.93 | 1.00 | 1.02 | 0.80 | 0.93 | 0.84 |
| 118 | 126 | 110 | 136 | 147 | 150 | 116 | 136 | 124 | 0.80 | 0.86 | 0.75 | 0.93 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 106 | 113 | 98 | 121 | 131 | 134 | 104 | 121 | 110 | 0.81 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.92 | 0.84 |
| 91 | 97 | 84 | 105 | 114 | 116 | 90 | 105 | 96 | 0.80 | 0.85 | 0.74 | 0.92 | 1.00 | 1.02 | 0.79 | 0.92 | 0.84 |
| 14 | 157 | 137 | 169 | 183 | 187 | 146 | 71 | 154 | . 81 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.80 | 0.93 | 0.84 |
| 102 | 109 | 96 | 119 | 129 | 132 | 02 | 20 | 108 | 0.79 | 0.8 | 0.74 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 110 | 117 | 102 | 126 | 137 | 140 | 109 | 127 | 116 | 0.80 | 0.85 | 0.74 | 0.92 | 1.00 | 1.02 | 0.80 | 0.93 | 0.85 |
| 21 | 226 | 197 | 242 | 263 | 268 | 209 | 245 | 221 | 0.81 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 193 | 205 | 179 | 220 | 239 | 244 | 190 | 222 | 201 | 0.81 | 0.86 | 0.75 | 0.92 | 1.00 | 1.02 | 0.79 | 0.93 | 0.84 |
| 143 | 152 | 133 | 162 | 176 | 180 | 141 | 165 | 148 | 0.81 | 0.86 | 0.76 | 0.92 | 1.00 | 1.02 | 0.80 | 0.94 | 0.84 |
|  |  |  |  |  |  |  |  | Av | 0.81 | 0.8 | 0.75 | 0.92 | 1.00 | 1.02 | 0.7 | 0.93 | 0.84 |
| 70 | 170 | 148 | 179 | 197 | 211 | 165 | 206 | 176 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.89 |
| 145 | 145 | 126 | 153 | 168 | 180 | 141 | 176 | 150 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.8 | 1.05 | 0.89 |
| 107 | 107 | 93 | 113 | 124 | 133 | 104 | 130 | 111 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.90 |
| 77 | 77 | 66 | 81 | 89 | 95 | 74 | 93 | 79 | 0.87 | 0.87 | 0.74 | 0.91 | 1.00 | 1.07 | 0.83 | 1.04 | 0.89 |
| 111 | 111 | 96 | 117 | 128 | 138 | 108 | 135 | 115 | 0.87 | 0.87 | 0.75 | 0.91 | 1.00 | 1.08 | 0.84 | 1.05 | 0.90 |
| 81 | 81 | 70 | 85 | 94 | 101 | 79 | 98 | 84 | 0.86 | 0.86 | 0.74 | 0.90 | 1.00 | 1.07 | 0.84 | 1.04 | 0.89 |
| 113 | 113 | 98 | 119 | 131 | 140 | 110 | 137 | 117 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.89 |
| 87 | 87 | 76 | 92 | 101 | 109 | 85 | 106 | 91 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.08 | 0.84 | 1.05 | 0.90 |
| 67 | 67 | 58 | 71 | 77 | 83 | 65 | 81 | 69 | 0.87 | 0.87 | 0.75 | 0.92 | 1.00 | 1.08 | 0.84 | 1.05 | 0.90 |
| 135 | 135 | 117 | 143 | 157 | 168 | 131 | 164 | 140 | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.83 | 1.04 | 0.89 |
| 142 | 142 | 123 | 150 | 164 | 176 | 138 | 172 | 147 | 0.87 | 0.87 | 0.75 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.90 |
| 84 | 84 | 73 | 89 | 98 | 105 | 82 | 103 | 88 | 0.86 | 0.86 | 0.74 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.90 |
|  |  |  |  |  |  |  |  | Avg | 0.86 | 0.86 | 0.75 | 0.91 | 1.00 | 1.07 | 0.84 | 1.05 | 0.89 |

Exh I
Testing of Actual vs Expected Premium Rate Increase by Plan (7/1/10 vs 7/1/09)
00354 \& 00028 Rates


Exhibit J
Testing of 2010 Rate Development Calculations per 00028, 00354 \& 00339 Filings AHP Calculated vs Actual Rates, 7/1/10

## 00028

Calculated Rate: 00028 SA-Value 2500, 7/1/09 Trend Area Factor Change (factor) 00028 SA-Value 2500, 7/1/10

## vs. Actual 7/1/10 Rate

 Difference| Development of 7/1/10 (9/1) Rates |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RA1 | RA2 | RA3 | RA4 | RA5 | RA6 | RA7 | RA8 | RA9 |
|  |  |  |  |  |  |  |  |  |
| $\$ 89$ | $\$ 111$ | $\$ 102$ | $\$ 109$ | $\$ 123$ | $\$ 117$ | $\$ 102$ | $\$ 102$ | $\$ 104$ |
| 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 |
| 1.026 | 0.997 | 0.976 | 0.996 | 0.996 | 1.026 | 1.026 | 1.025 | 1.024 |
| $\$ 107$ | $\$ 130$ | $\$ 117$ | $\$ 127$ | $\$ 144$ | $\$ 141$ | $\$ 123$ | $\$ 123$ | $\$ 125$ |
| $\$ 107$ | $\$ 130$ | $\$ 117$ | $\$ 127$ | $\$ 144$ | $\$ 141$ | $\$ 123$ | $\$ 123$ | $\$ 125$ |
| $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ |

## 00354

## Calculated Rate:

 00354-Value 2500, 7/1/09 Trend Area Factor Change (factor) 00354-Value 2500, 7/1/10vs. Actual 7/1/10 Rate Difference

| $\$ 94$ | $\$ 110$ | $\$ 101$ | $\$ 105$ | $\$ 121$ | $\$ 121$ | $\$ 106$ | $\$ 106$ | $\$ 108$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 | 1.173 |
| 1.040 | 0.950 | 0.900 | 1.065 | 1.000 | 1.030 | 0.910 | 1.065 | 0.950 |
| $\$ 115$ | $\$ 123$ | $\$ 107$ | $\$ 131$ | $\$ 142$ | $\$ 146$ | $\$ 113$ | $\$ 132$ | $\$ 120$ |
| $\$ 115$ | $\$ 123$ | $\$ 107$ | $\$ 131$ | $\$ 142$ | $\$ 146$ | $\$ 113$ | $\$ 132$ | $\$ 120$ |
| $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ |

## 00339

Calculated Rate:

| 00354-Value 2500, 7/1/09 | $\$ 94$ | $\$ 110$ | $\$ 101$ | $\$ 105$ | $\$ 121$ | $\$ 121$ | $\$ 106$ | $\$ 106$ | $\$ 108$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Benefit Adj (Ambul to $\$ 10 \mathrm{k}$ ) | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| Trend (factor) | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ | $12.8 \%$ |
| Pricing Adj (factor) | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ | $2.2 \%$ |
| Ben. Adj to 00339-Value 2500 w/ 3 OV | 0.8665 | 0.8665 | 0.8665 | 0.8665 | 0.8665 | 0.8665 | 0.8665 | 0.8665 | 0.8665 |
| Subtotal | $\$ 97$ | $\$ 113$ | $\$ 104$ | $\$ 108$ | $\$ 124$ | $\$ 124$ | $\$ 109$ | $\$ 109$ | $\$ 111$ |
| Addi'l 00339 Area Factor | 1.110 | 0.950 | 0.900 | 1.050 | 1.000 | 1.080 | 0.960 | 1.200 | 1.000 |
| 00339-Value 2500, 3 OV, 7/1/10 | $\$ 107$ | $\$ 107$ | $\$ 93$ | $\$ 113$ | $\$ 124$ | $\$ 133$ | $\$ 104$ | $\$ 130$ | $\$ 111$ |
| Actual 7/1/10 Rate | $\$ 107$ | $\$ 107$ | $\$ 93$ | $\$ 113$ | $\$ 124$ | $\$ 133$ | $\$ 104$ | $\$ 130$ | $\$ 111$ |
| fference | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ | $\$ 0$ |



| Minimum \% Increase: | $\mathbf{2 0 \%}$ | Expected Incr: | Base |
| :--- | ---: | ---: | ---: |
| Maximum \% Increase: | $\mathbf{2 1 \%}$ |  | Area |
| M | 1.026 |  |  |
| Simple Avg \% Increase | $\mathbf{2 1 \%}$ |  | Total |



| $\%$ Increase |  |  |
| :--- | :--- | :--- |
| Single | Single |  |
| Male | Female | Couple |
| Ch(ren) | $\underline{C h(r e n) ~ F a m i l y ~}$ |  |


| 327 | 327 | 654 | 535 | 535 | 862 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 196 | 196 | 392 | 404 | 404 | 600 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 104 | 104 | 208 | 312 | 312 | 416 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 116 | 152 | 268 | 324 | 360 | 476 | 20\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 117 | 158 | 275 | 325 | 366 | 483 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 118 | 163 | 281 | 326 | 371 | 489 | 20\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 121 | 168 | 289 | 329 | 376 | 497 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 123 | 171 | 294 | 331 | 379 | 502 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 126 | 175 | 301 | 334 | 383 | 509 | 20\% | 21\% | 20\% | 21\% | 21\% | 21\% |
| 128 | 179 | 307 | 336 | 387 | 515 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 130 | 183 | 313 | 338 | 391 | 521 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 133 | 187 | 320 | 341 | 395 | 528 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 141 | 194 | 335 | 349 | 402 | 543 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 148 | 201 | 349 | 356 | 409 | 557 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 155 | 208 | 363 | 363 | 416 | 571 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 163 | 215 | 378 | 371 | 423 | 586 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 170 | 222 | 392 | 378 | 430 | 600 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 170 | 226 | 396 | 378 | 434 | 604 | 21\% | 20\% | 21\% | 21\% | 21\% | 21\% |
| 171 | 231 | 402 | 379 | 439 | 610 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 171 | 236 | 407 | 379 | 444 | 615 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 171 | 240 | 411 | 379 | 448 | 619 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 172 | 245 | 417 | 380 | 453 | 625 | 20.3\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 177 | 251 | 428 | 385 | 459 | 636 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 183 | 256 | 439 | 391 | 464 | 647 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 188 | 262 | 450 | 396 | 470 | 658 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 194 | 266 | 460 | 402 | 474 | 668 | 20\% | 21\% | 20\% | 21\% | 21\% | 21\% |
| 199 | 272 | 471 | 407 | 480 | 679 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 219 | 278 | 497 | 427 | 486 | 705 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 239 | 283 | 522 | 447 | 491 | 730 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 259 | 289 | 548 | 467 | 497 | 756 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 279 | 294 | 573 | 487 | 502 | 781 | 20\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 299 | 300 | 599 | 507 | 508 | 807 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 306 | 314 | 620 | 514 | 522 | 828 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 314 | 330 | 644 | 522 | 538 | 852 | 21\% | 20\% | 20\% | 21\% | 20\% | 21\% |
| 323 | 344 | 667 | 531 | 552 | 875 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 330 | 358 | 688 | 538 | 566 | 896 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 338 | 373 | 711 | 546 | 581 | 919 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 360 | 379 | 739 | 568 | 587 | 947 | 21\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 382 | 385 | 767 | 590 | 593 | 975 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 405 | 391 | 796 | 613 | 599 | 1004 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 427 | 396 | 823 | 635 | 604 | 1031 | 20\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 449 | 402 | 851 | 657 | 610 | 1059 | 20\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 468 | 430 | 898 | 676 | 638 | 1106 | 20\% | 21\% | 20\% | 21\% | 21\% | 21\% |
| 486 | 459 | 945 | 694 | 667 | 1153 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 504 | 487 | 991 | 712 | 695 | 1199 | 20\% | 21\% | 20\% | 21\% | 21\% | 21\% |
| 522 | 516 | 1038 | 730 | 724 | 1246 | 20\% | 20\% | 20\% | 21\% | 21\% | 21\% |
| 541 | 544 | 1085 | 749 | 752 | 1293 | 20\% | 20\% | 20\% | 21\% | 21\% | 20\% |
| 584 | 557 | 1141 | 792 | 765 | 1349 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |
| 629 | 571 | 1200 | 837 | 779 | 1408 | 21\% | 20\% | 21\% | 21\% | 21\% | 21\% |
| 673 | 585 | 1258 | 881 | 793 | 1466 | 21\% | 21\% | 21\% | 21\% | 21\% | 21\% |

Exhibit K-2
Testing Rate Increases by Age \& Tier Test 5-Yr Age Banded Plans (SS and FD)

| Tested Area and Plan |  |
| :--- | :---: |
| Rating Area (1-9) | 9 |
| Plan (1-18 for SS or FD) | 18 |
| PlanCo FD-FD $40-3 / 1 / 08$ |  |


|  | New Rates |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Single | Single |  | Male \& | Fem \& |  |
| Age | Male | Female | Couple | Ch(ren) | $\mathrm{Ch}($ ren $)$ | Family |
| 0 | 246 | 246 | 492 | 442 | 442 | 688 |
| 1 | 148 | 148 | 296 | 344 | 344 | 492 |
| 2-18 | 98 | 98 | 196 | 294 | 294 | 392 |
| 19-24 | 105 | 148 | 253 | 301 | 344 | 449 |
| 25-29 | 119 | 169 | 288 | 315 | 365 | 484 |
| 30-34 | 138 | 184 | 322 | 334 | 380 | 518 |
| 35-39 | 161 | 196 | 357 | 357 | 392 | 553 |
| 40-44 | 192 | 214 | 406 | 388 | 410 | 602 |
| 45-49 | 238 | 229 | 467 | 434 | 425 | 663 |
| 50-54 | 306 | 259 | 565 | 502 | 455 | 761 |
| 55-59 | 398 | 311 | 709 | 594 | 507 | 905 |
| 60-64 | 560 | 395 | 955 | 756 | 591 | 1151 |
| 65+ | 598 | 442 | 1040 | 794 | 638 | 1236 |

Minimum \% Increase:
Maximum \% Increase:
Simple Avg \% Increase

| $20 \%$ |
| :--- |
| $21 \%$ |
| $20 \%$ |


| Old Rates |  |  |  |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| Single | Single |  |  |
| Male | Female Couple | Ch(ren) | $\underline{C h(r e n) ~ F a m i l y ~}$ |


| 205 | 205 | 410 | 369 | 369 | 574 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 123 | 123 | 246 | 287 | 287 | 410 |
| 82 | 82 | 164 | 246 | 246 | 328 |
| 87 | 123 | 210 | 251 | 287 | 374 |
| 99 | 141 | 240 | 263 | 305 | 404 |
| 115 | 153 | 268 | 279 | 317 | 432 |
| 134 | 163 | 297 | 298 | 327 | 461 |
| 160 | 178 | 338 | 324 | 342 | 502 |
| 198 | 191 | 389 | 362 | 355 | 553 |
| 255 | 216 | 471 | 419 | 380 | 635 |
| 331 | 259 | 590 | 495 | 423 | 754 |
| 466 | 329 | 795 | 630 | 493 | 959 |
| 498 | 368 | 866 | 662 | 532 | 1030 |


| Expected Incr: | Base | 1.173 |
| :--- | :---: | ---: |
|  | Area | 1.024 |
|  | Total | $\mathbf{2 0 \%}$ |


| \% Increase |  |  |  |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| Single | Single | Male \& |  |
| Male | Female | Couple | Ch(ren) |
|  | Ch(ren) Family |  |  |


| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $21 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20.1 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |
| $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ | $20 \%$ |

LLR Scenario Testing for PF-00354 Assumptions by Scenario


## Notes:

AHP Modeling of Policy Lapse rates \& Claims Duration factors is applied by policy duration.
AHP Modeling of premium rate increases \& normal claims trend is applied by projection year
Assumed policy lapse rates and rate increases are applied at policy anniversary.

## AHP Lifetime Loss Ratio Calculation



| Assumptions by Proj. Year |  |  |  |
| :---: | :---: | :---: | :---: |
| \$Prem |  |  |  |
| from | Prem |  |  |
| Proj | New | Incr. | Normal |
| Year | Sales | (Trend) | Trend |


| Single Cohort of N.Sales |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) |  | Undisc. | Present Values (APV) |  |  |
|  | Earned | Inc'd | Inc'd | Annual Amts |  |
|  | Prem | Claims | LR | Prem |  |
|  |  | Clms | Prem | Clms |  |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. |  | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulativ |
| Prem Claims | LR | Prem Clms | Clms |


| 1 |  | 0.73 |
| :---: | :---: | :---: |
| 2 | $35 \%$ | 0.82 |
| 3 | $35 \%$ | 0.90 |
| 4 | $35 \%$ | 0.96 |
| 5 | $35 \%$ | 1.00 |
| 6 | $35 \%$ | 1.03 |
| 7 | $35 \%$ | 1.07 |
| 8 | $35 \%$ | 1.12 |
| 9 | $35 \%$ | 1.12 |
| 10 | $35 \%$ | 1.12 |
| 11 | $35 \%$ | 1.12 |
| 12 | $35 \%$ | 1.12 |
| 13 | $35 \%$ | 1.12 |
| 14 | $35 \%$ | 1.12 |
| 15 | $35 \%$ | 1.12 |
| 16 | $35 \%$ | 1.12 |
| 17 | $35 \%$ | 1.12 |
| 18 | $35 \%$ | 1.12 |
| 19 | $35 \%$ | 1.12 |
| 20 | $35 \%$ | 1.12 |
| 21 | $35 \%$ | 1.12 |
| 22 | $35 \%$ | 1.12 |
| 23 | $35 \%$ | 1.12 |
| 24 | $35 \%$ | 1.12 |
| 25 | $35 \%$ | 1.12 |

Exhibit M-1A
Aetna Filing: PF-2010-00354 AHP Lifetime Loss Ratio Calculation

Scenario 1A
(with 1\% Prem Rate Reduction)


| Assumptions by Proj. Year |  |  |  |
| :---: | :---: | :---: | :---: |
| \$Prem |  |  |  |
| from | Rrem |  |  |
| Proj | New | Incr. | Normal |
| Year | Sales | (Trend) | Trend |


| Single Cohort of N.Sales |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. | Pres | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulative |
| Prem Claims | LR | Prem Clms | Clms |


| 1,000 | 601 | 60.1\% | 978 | 587 | 978 | 587 | 60.0\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 765 | 497 | 65.0\% | 712 | 462 | 1,690 | 1,049 | 62.0\% |
| 563 | 401 | 71.2\% | 499 | 355 | 2,190 | 1,404 | 64.1\% |
| 414 | 313 | 75.7\% | 350 | 264 | 2,539 | 1,668 | 65.7\% |
| 305 | 241 | 79.1\% | 245 | 193 | 2,784 | 1,861 | 66.8\% |
| 224 | 182 | 81.3\% | 172 | 139 | 2,956 | 2,000 | 67.7\% |
| 165 | 139 | 84.3\% | 120 | 101 | 3,076 | 2,102 | 68.3\% |
| 121 | 107 | 88.2\% | 84 | 74 | 3,160 | 2,176 | 68.8\% |
| 89 | 79 | 88.2\% | 59 | 52 | 3,219 | 2,228 | 69.2\% |
| 66 | 58 | 88.2\% | 41 | 36 | 3,261 | 2,264 | 69.4\% |
| 48 | 43 | 88.2\% | 29 | 25 | 3,290 | 2,290 | 69.6\% |
| 35 | 31 | 88.2\% | 20 | 18 | 3,310 | 2,307 | 69.7\% |
| 26 | 23 | 88.2\% | 14 | 13 | 3,324 | 2,320 | 69.8\% |
| 19 | 17 | 88.2\% | 10 | 9 | 3,334 | 2,329 | 69.8\% |
| 14 | 12 | 88.2\% | 7 | 6 | 3,341 | 2,335 | 69.9\% |
| 10 | 9 | 88.2\% | 5 | 4 | 3,346 | 2,339 | 69.9\% |
| 8 | 7 | 88.2\% | 3 | 3 | 3,349 | 2,342 | 69.9\% |
| 6 | 5 | 88.2\% | 2 | 2 | 3,352 | 2,344 | 69.9\% |
| 4 | 4 | 88.2\% | 2 | 1 | 3,353 | 2,346 | 69.9\% |
| 3 | 3 | 88.2\% | 1 | 1 | 3,355 | 2,347 | 70.0\% |
| 2 | 2 | 88.2\% | 1 | 1 | 3,355 | 2,347 | 70.0\% |
| 2 | 1 | 88.2\% | 1 | 1 | 3,356 | 2,348 | 70.0\% |
| 1 | 1 | 88.2\% | 0 | 0 | 3,356 | 2,348 | 70.0\% |
| 1 | 1 | 88.2\% | 0 | 0 | 3,357 | 2,349 | 70.0\% |
| 1 | 1 | 88.2\% | 0 | 0 | 3,357 | 2,349 | 70.0\% |
| (before present values) |  |  | Present Value Basis |  |  |  |  |
| 3,892 | 2,777 | 71\% | 3,357 | 2,349 |  | LLR: | 70.0\% |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. | Pres | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulativ |
| Prem Claims | LR | Prem Clms | Clms |


| 1,000 | 601 | 60\% | 978 | 587 | 978 | 587 | 60.0\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1,765 | 1,075 | 61\% | 1,644 | 999 | 2,622 | 1,586 | 60.5\% |
| 1,298 | 879 | 68\% | 1,152 | 778 | 3,773 | 2,364 | 62.7\% |
| 955 | 699 | 73\% | 807 | 589 | 4,580 | 2,953 | 64.5\% |
| 703 | 542 | 77\% | 565 | 435 | 5,145 | 3,388 | 65.9\% |
| 517 | 414 | 80\% | 396 | 316 | 5,541 | 3,705 | 66.9\% |
| 380 | 314 | 83\% | 277 | 229 | 5,819 | 3,933 | 67.6\% |
| 280 | 240 | 86\% | 194 | 167 | 6,013 | 4,100 | 68.2\% |
| 206 | 181 | 88\% | 136 | 120 | 6,149 | 4,220 | 68.6\% |
| 151 | 133 | 88\% | 95 | 84 | 6,244 | 4,304 | 68.9\% |
| 111 | 98 | 88\% | 67 | 59 | 6,311 | 4,363 | 69.1\% |
| 82 | 72 | 88\% | 47 | 41 | 6,358 | 4,404 | 69.3\% |
| 60 | 53 | 88\% | 33 | 29 | 6,391 | 4,433 | 69.4\% |
| 44 | 39 | 88\% | 23 | 20 | 6,414 | 4,453 | 69.4\% |
| 33 | 29 | 88\% | 16 | 14 | 6,430 | 4,467 | 69.5\% |
| 24 | 21 | 88\% | 11 | 10 | 6,441 | 4,477 | 69.5\% |
| 18 | 16 | 88\% | 8 | 7 | 6,449 | 4,484 | 69.5\% |
| 13 | 11 | 88\% | 6 | 5 | 6,455 | 4,489 | 69.5\% |
| 10 | 8 | 88\% | 4 | 3 | 6,459 | 4,492 | 69.6\% |
| 7 | 6 | 88\% | 3 | 2 | 6,461 | 4,495 | 69.6\% |
| 5 | 5 | 88\% | 2 | 2 | 6,463 | 4,496 | 69.6\% |
| 4 | 3 | 88\% | 1 | 1 | 6,464 | 4,498 | 69.6\% |
| 3 | 2 | 88\% | 1 | 1 | 6,465 | 4,498 | 69.6\% |
| 2 | 2 | 88\% | 1 | 1 | 6,466 | 4,499 | 69.6\% |
| 2 | 1 | 88\% | 0 | 0 | 6,467 | 4,499 | 69.6\% |
| (before present values) |  |  | Present Value Basis |  |  |  |  |
| 7671 | 5447 | 71\% | 6467 | 4499 |  | LLR: | 69.6\% |

## AHP Lifetime Loss Ratio Calculation



| Assumptions by Proj. Year |  |  |  |
| :---: | :---: | :---: | :---: |
| \$Prem |  |  |  |
| from | Prem |  |  |
| Proj | Rew | Incr. | Clms |
| Year | Sales | (Trend) | Trend |


| Single Cohort of N.Sales |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Proj Amts (\$) |  | Undisc. | Present Values (APV) |  |  |
|  | Earned | Inc'd | Inc'd | Annual Amts | Cumulative |
|  | Prem | Claims | LR | Prem | Clms |
|  |  |  | Prem | Clms | LLR |


| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. |  | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulativ |
| Prem Claims | LR | Prem Clms | Clms |


| 1 |  | 0.78 |
| :---: | :---: | :---: |
| 2 | $35 \%$ | 0.81 |
| 3 | $35 \%$ | 0.91 |
| 4 | $35 \%$ | 0.95 |
| 5 | $35 \%$ | 1.00 |
| 6 | $35 \%$ | 1.02 |
| 7 | $35 \%$ | 1.06 |
| 8 | $35 \%$ | 1.10 |
| 9 | $35 \%$ | 1.10 |
| 10 | $35 \%$ | 1.10 |
| 11 | $35 \%$ | 1.10 |
| 12 | $35 \%$ | 1.10 |
| 13 | $35 \%$ | 1.10 |
| 14 | $35 \%$ | 1.10 |
| 15 | $35 \%$ | 1.10 |
| 16 | $35 \%$ | 1.10 |
| 17 | $35 \%$ | 1.10 |
| 18 | $35 \%$ | 1.10 |
| 19 | $35 \%$ | 1.10 |
| 20 | $35 \%$ | 1.10 |
| 21 | $35 \%$ | 1.10 |
| 22 | $35 \%$ | 1.10 |
| 23 | $35 \%$ | 1.10 |
| 24 | $35 \%$ | 1.10 |
| 25 | $35 \%$ | 1.10 |

Exhibit M-2A
Aetna Filing: PF-2010-00354 AHP Lifetime Loss Ratio Calculation

Scenario 2A
(with 3.1\% Prem Rate Reduction)




| Cumulative Based On New Sales During Yrs 1-10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Proj Amts (\$) | Undisc. |  | (APV) |
| Earned Inc'd | Inc'd | Annual Amts | Cumulative |
| Prem Claims | LR | Prem CIms | Clms |


| 1 |  | 0.78 |
| :---: | :---: | :---: |
| 2 | $35 \%$ | 0.81 |
| 3 | $35 \%$ | 0.91 |
| 4 | $35 \%$ | 0.95 |
| 5 | $35 \%$ | 1.00 |
| 6 | $35 \%$ | 1.02 |
| 7 | $35 \%$ | 1.06 |
| 8 | $35 \%$ | 1.10 |
| 9 | $35 \%$ | 1.10 |
| 10 | $35 \%$ | 1.10 |
| 11 | $35 \%$ | 1.10 |
| 12 | $35 \%$ | 1.10 |
| 13 | $35 \%$ | 1.10 |
| 14 | $35 \%$ | 1.10 |
| 15 | $35 \%$ | 1.10 |
| 16 | $35 \%$ | 1.10 |
| 17 | $35 \%$ | 1.10 |
| 18 | $35 \%$ | 1.10 |
| 19 | $35 \%$ | 1.10 |
| 20 | $35 \%$ | 1.10 |
| 21 | $35 \%$ | 1.10 |
| 22 | $35 \%$ | 1.10 |
| 23 | $35 \%$ | 1.10 |
| 24 | $35 \%$ | 1.10 |
| 25 | $35 \%$ | 1.10 |



| 1,000 | 622 | 62\% | 978 | 607 | 978 | 607 | 62.1\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1,749 | 1,090 | 62\% | 1,629 | 1,013 | 2,607 | 1,620 | 62.1\% |
| 1,286 | 863 | 67\% | 1,141 | 764 | 3,748 | 2,384 | 63.6\% |
| 946 | 689 | 73\% | 799 | 580 | 4,547 | 2,964 | 65.2\% |
| 696 | 532 | 76\% | 560 | 427 | 5,107 | 3,391 | 66.4\% |
| 512 | 407 | 79\% | 392 | 311 | 5,499 | 3,702 | 67.3\% |
| 377 | 308 | 82\% | 275 | 224 | 5,774 | 3,927 | 68.0\% |
| 277 | 235 | 85\% | 193 | 163 | 5,967 | 4,090 | 68.5\% |
| 204 | 177 | 87\% | 135 | 117 | 6,102 | 4,207 | 68.9\% |
| 150 | 130 | 87\% | 94 | 82 | 6,196 | 4,288 | 69.2\% |
| 110 | 96 | 87\% | 66 | 57 | 6,262 | 4,346 | 69.4\% |
| 81 | 70 | 87\% | 46 | 40 | 6,309 | 4,386 | 69.5\% |
| 60 | 52 | 87\% | 32 | 28 | 6,341 | 4,414 | 69.6\% |
| 44 | 38 | 87\% | 23 | 20 | 6,364 | 4,434 | 69.7\% |
| 32 | 28 | 87\% | 16 | 14 | 6,380 | 4,448 | 69.7\% |
| 24 | 21 | 87\% | 11 | 10 | 6,391 | 4,457 | 69.7\% |
| 17 | 15 | 87\% | 8 | 7 | 6,399 | 4,464 | 69.8\% |
| 13 | 11 | 87\% | 5 | 5 | 6,404 | 4,469 | 69.8\% |
| 9 | 8 | 87\% | 4 | 3 | 6,408 | 4,472 | 69.8\% |
| 7 | 6 | 87\% | 3 | 2 | 6,411 | 4,474 | 69.8\% |
| 5 | 4 | 87\% | 2 | 2 | 6,413 | 4,476 | 69.8\% |
| 4 | 3 | 87\% | 1 | 1 | 6,414 | 4,477 | 69.8\% |
| 3 | 2 | 87\% | 1 | 1 | 6,415 | 4,478 | 69.8\% |
| 2 | 2 | 87\% | 1 | 1 | 6,416 | 4,479 | 69.8\% |
| 1 | 1 | 87\% | 0 | 0 | 6,416 | 4,479 | 69.8\% |
| (before present values) |  |  | Present Value Basis |  |  |  |  |
| 7610 | 5411 | 71\% | 6416 | 4479 |  | LLR: | 69.8\% |



## Detail for Adjustments to Year-1 for Duration \& Other Differences between 00354 and 00028

| Adj to Yr-1 Clms Duration (Yr-1 vs. Base Period) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dist'n of Mbr Months by Duration |  |  | Originally filed 00354 Claims Duration Factor |  |  |  |
| 0022800354 |  |  | By | 00028 | 00354 | Ratio |
| Dur. | Base* | Year 1 | Dur. | Base* | Yr-1 | /00028 |
|  |  |  |  |  |  | Applied |
| 1 | 52\% | 100\% | 0.73 |  |  |  |
| 2 | 30\% | 0\% | 0.82 |  |  |  |
| 3 | 16\% | 0\% | 0.90 |  |  |  |
| 4 | 2\% | 0\% | 0.96 |  |  |  |
| 5 | 0\% | 0\% | 1.00 |  |  |  |
| 6 | 0\% | 0\% | 1.03 |  |  |  |
| Wtd Avgs per Mbr Mo Distn: |  |  |  | 0.791 | 0.731 | 0.925 |


| Adj for Plan-specific LR Experience |  |
| :---: | :---: |
|  |  |
| $00028 / 354$ Base Per Exper: 8/1/08-7/31/09 |  |
|  | Inc'd |
| AR |  |
| All Plans | $73.4 \%$ |
| Excl. MC 1500+ | $67.9 \%$ |
| (Excl non-00354) |  |
|  |  |
| Ratio Applied to LR: | 0.9246 |
| Ratio Applied: | $\mathbf{0 . 9 2 5}$ |
|  |  |
|  |  |

## Adj for 00354 Relative Premium Rates vs 00028 Prem Rates

Add'I Adj for 00354 Relative Prem Rates vs 00028 (Benefit-Adjusted), 7/1/10
Wtd Avg Ratio 00354 / 00028 for all Areas / Plans *
vs Ratio Expected per Benefit Difference (Ambul)
Total Benefit-Adjusted Relative Ratio of 00354 / 00028 Rates
Ratio Applied to LR based on Actual 00354 Pricing $\qquad$

* reflects wtd avg ratio by plan \& area (attributed to inclusion of

Ambul pricing differences in area factor changes, and approx
$9.9 \%$ higher rate for MC-5000 under 00354 compared to 00028

| Projected Year-1 Loss Ratio based on Adjusted Historical Experience |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Apply Prem Rate Increases to Proj. Yr-1 |  |  | Proj LR based on Trended Claims w/ 00354 Adjustments |  |  |  |  |  |  |
|  | PremPMPM |  |  | Normal Trend $\quad$ Trended Undisc. |  |  |  |  |  |
|  |  |  |  | Midpt | Trend | Mo's | Factor | PMPM | LR |
| 00028 Base Period, 8/1/08-7/31/09: |  | 181.46 | 00028 Base Period: 8/1/08-7/31/09: | 2/8/09 |  |  |  | 133.46 | 73.5\% |
| Adj to 7/1/08-6/30/09 Rating Period: | 0.986 | 178.88 | Policy Yr beginning 9/1/09 | 3/1/10 | 12.8\% | 12.7 | 1.135 | 151.54 | 72.2\% |
| 00028 Rate Incr 7/1/09 | 1.173 | 209.83 | 00028 Trended for Eff. 9/1/09 before adj for change in duration: 72.2\% |  |  |  |  |  |  |
| 00028 N.B. Rate Eff. 9/1/09 | 1.000 | 209.83 | Adj to Year-1 for Dur. \& other differences between 00354 and 00028: |  |  |  |  |  |  |
| Note: Yr-1 of LLR Proj for 00354 will include rate incr of $18.5 \%$ per wtd avg across all areas/plans, incl area factor changes |  |  | x Adj to Yr-1 Duration (Yr-1 | ): |  |  | 0.956 | $=$ | 69.1\% |
|  |  |  | x Adj for Plan-Specific LR exp | 1500+): |  |  | 0.925 | = | 63.9\% |
|  |  |  | x Adj for 00354 Relative Prem |  |  |  | 0.974 | = | 62.2\% |
|  |  |  | Proj 00354 Year-1 LR (MBR) |  |  |  |  |  | 62.2\% |

## Detail for Adjustments to Year-1 for Duration \& Other Differences between 00354 and 00028

| Adj to Yr-1 Clms Duration (Yr-1 vs. Base Period) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dist'n of Mbr Months by Duration |  |  | Originally filed 00339 Claims Duration Factor |  |  |  |
| 0022800354 |  |  | By | 00028 |  | Ratio |
| Dur. | Base* | Year 1 | Dur. | Base* | Yr-1 | /00028 |
|  |  |  |  |  |  | Applied |
| 1 | 52\% | 100\% | 0.78 |  |  |  |
| 2 | 30\% | 0\% | 0.81 |  |  |  |
| 3 | 16\% | 0\% | 0.91 |  |  |  |
| 4 | 2\% | 0\% | 0.95 |  |  |  |
| 5 | 0\% | 0\% | 1.00 |  |  |  |
| 6 | 0\% | 0\% | 1.02 |  |  |  |
| Wtd Avgs per Mbr Mo Distn: |  |  |  | 0.812 | 0.777 | 0.956 |


| Adj for Plan-specific LR Experience |  |
| :---: | :---: |
|  |  |
| $00028 / 354$ Base Per Exper: 8/1/08-7/31/09 |  |
|  | Inc'd |
| AR |  |
| All Plans | $73.4 \%$ |
| Excl. MC 1500+ | $67.9 \%$ |
| (Excl non-00354) |  |
|  |  |
| Ratio Applied to LR: | 0.9246 |
| Ratio Applied: | $\mathbf{0 . 9 2 5}$ |
|  |  |
|  |  |

## Adj for 00354 Relative Premium Rates vs 00028 Prem Rates

Add'I Adj for 00354 Relative Prem Rates vs 00028 (Benefit-Adjusted), 7/1/10
Wtd Avg Ratio 00354 / 00028 for all Areas / Plans *
vs Ratio Expected per Benefit Difference (Ambul)
Total Benefit-Adjusted Relative Ratio of 00354 / 00028 Rates
Ratio Applied to LR based on Actual 00354 Pricing $\qquad$

* reflects wtd avg ratio by plan \& area (attributed to inclusion of

Ambul pricing differences in area factor changes, and approx
$9.9 \%$ higher rate for MC-5000 under 00354 compared to 00028

## AHP Lifetime Loss Ratio Testing

Aetna 8/31 Filing: \$0 Deductibles


Notes:

* Modeled midpt for discouting based on historical monthly mbrship \& projected monthly lapses \& new sales
** The ratio of PMPM claims (and Prem PMPM) over the prior period PMPM (not annualized)
Other: Present values based on valuation date (for discounting) of 07/01/10
Total PMPM claims trend includes underlying trend, selection \& U/W wear-off (relative duration factors), \& applic. sales adjustment.


## Exhibit P-2

## AHP Lifetime Loss Ratio Testing Aetna 8/31 Filing: LE 2500 Deductibles



## Projected Experience

| $\mathbf{7 / 1 / 1 0}-6 / 30 / 11$ | 12 | $12 / 18 / 10$ | 226,232 | $61,708,306$ | $55,005,871$ | 272.77 | 243.14 | $89.1 \%$ |  |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $7 / 1 / 11$ | - | $6 / 30 / 12$ | 12 | $12 / 18 / 11$ | 147,523 | $47,696,042$ | $41,535,869$ | 323.31 | 281.56 |
| $7 / 1 / 12$ | $-6 / 30 / 13$ | 12 | $12 / 18 / 12$ | 96,194 | $35,392,631$ | $31,092,342$ | 367.93 | 323.23 | $87.8 \%$ |
| $7 / 1 / 13-6 / 30 / 14$ | 12 | $12 / 18 / 13$ | 62,728 | $26,264,466$ | $23,073,271$ | 418.70 | 367.83 | $87.8 \%$ |  |
| $7 / 1 / 14-6 / 30 / 15$ | 12 | $12 / 18 / 14$ | 40,916 | $19,324,550$ | $16,976,572$ | 472.30 | 414.91 | $87.8 \%$ |  |
| $7 / 1 / 15-6 / 30 / 16$ | 12 | $12 / 18 / 15$ | 26,686 | $14,217,028$ | $12,489,625$ | 532.75 | 468.02 | $87.8 \%$ |  |
| $7 / 1 / 16-6 / 30 / 17$ | 12 | $12 / 18 / 16$ | 17,410 | $10,462,445$ | $9,191,233$ | 600.94 | 527.93 | $87.8 \%$ |  |


| 60,441 | 53,767 | 275,123 | 231,622 | $84.2 \%$ |
| ---: | ---: | ---: | ---: | :---: |
| 44,492 | 38,667 | 319,615 | 270,289 | $84.6 \%$ |
| 31,443 | 27,566 | 351,058 | 297,855 | $84.8 \%$ |
| 22,222 | 19,483 | 373,280 | 317,338 | $85.0 \%$ |
| 15,572 | 13,652 | 388,852 | 330,990 | $85.1 \%$ |
| 10,911 | 9,565 | 399,762 | 340,555 | $85.2 \%$ |
| 7,647 | 6,704 | 407,409 | 347,259 | $\mathbf{8 5 . 2 \%}$ |
| 192,727 | 169,404 |  |  | LLR |
|  | $87.9 \%$ | Future Yrs Only: | (APV |  |
|  |  |  | Basis) |  |

407,409 347,259
85.2\% Total Lifetime:

Notes:

* Modeled midpt for discouting based on historical monthly mbrship \& projected monthly lapses \& new sales
** The ratio of PMPM claims (and Prem PMPM) over the prior period PMPM (not annualized)
Other: Present values based on valuation date (for discounting) of 07/01/10
Total PMPM claims trend includes underlying trend, selection \& U/W wear-off (relative duration factors), \& applic. sales adjustment.


## Exhibit P-3

AHP Lifetime Loss Ratio Testing
Aetna 8/31 Filing: GT 2500 Deductibles


Notes:

* Modeled midpt for discouting based on historical monthly mbrship \& projected monthly lapses \& new sales
** Wtd Avg claims duration factor based on assumed U/W duration per filing ( $80 \%$ of Milliman factors for GT 1000 Ded)
${ }^{* * *}$ The ratio of PMPM claims (and Prem PMPM) over the prior period PMPM (not annualized)
Other: Present values based on valuation date (for discounting) of 07/01/10
Total PMPM claims trend includes underlying trend, selection \& U/W wear-off (relative duration factors), \& applic. sales adjustment.


[^0]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

[^1]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

[^2]:    ＊Total PMPM claims trend including underlying trend，selection \＆U／W wear－off，\＆any new sales adjustment．
    For AHP－tested scenarios based on alternative durational factors，this includes the impact of underlying trend \＆the modeled trend associated with claims duration．
    This is expressed as the ratio of PMPM claims over the prior period PMPM（not annualized）

[^3]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

[^4]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

[^5]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

[^6]:    * Total PMPM claims trend including underlying trend, selection \& U/W wear-off, \& any new sales adjustment.

    For AHP-tested scenarios based on alternative durational factors, this includes the impact of underlying trend \& the modeled trend associated with claims duration.
    This is expressed as the ratio of PMPM claims over the prior period PMPM (not annualized)

