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July 16, 2018

Mr. Mike Yanacheak  
Chair, Variable Annuities Issues (E) Working Group  
National Association of Insurance Commissioners  
Via Email: Dan Daveline ([ddaveline@naic.org](mailto:ddaveline@naic.org))

Dear Mr. Yanacheak,

In the [March 2, 2018 letter](#) from the AG43/C3P2 Work Group (Work Group) of the American Academy of Actuaries,<sup>1</sup> we included comments on recommendation #14 of the Dec. 1, 2017, exposures of the NAIC Variable Annuities Issues Working Group<sup>2</sup> (VAIWG).

In our March 2 comments, the Work Group mentioned that we identified technical issues with the proposed policyholder behavior assumptions in the proposed Standard Projection (SP), and that we were planning on providing more specific comments. This letter includes these additional comments and supplements the comments in our March 2 letter. All of these comments relate to APPENDIX 3—Standard Projection Requirements in the proposed redline version of AG43 exposed on December 1, 2017 (20171201 Revised AG 43 (REDLINE on ORIGINAL) vF.pdf).

I. Withdrawal Delay Cohort Method

1. The method proposed in section A3.2)F)6) is potentially onerous for companies that do not already have such infrastructure and approach in place for their prudent estimate assumption. While some language is present in the exposure to attempt to mitigate the practical aspects of this infrastructure, we suggest more general language is needed to allow companies to use alternative approaches if the actuary can demonstrate that such alternatives are appropriate.
2. The withdrawal cohorts as described in A3.2)F)6) are prescribed to extend to age 120. Cohorts can be removed with the approval of the domiciliary commissioner. However, this may contradict the time horizon as defined in section A5.6) which states: “the horizon should be sufficiently long so as to capture the vast majority of costs (on a present value basis) from the scenarios” (footnote states it cannot be less than 20 years).

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<sup>1</sup> The American Academy of Actuaries is a 19,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

<sup>2</sup> This includes *20171201 NAIC VA QIS II Recommendations vF.pdf*, *20171201 Revised AG43 (REDLINE on ORIGINAL) vF.pdf*, and *20171201 Revised RBC LR027 (REDLINE on ORIGINAL) vF.pdf*.

Because the cohort wait times could extend past a ‘normal’ time horizon (e.g., 30 years), companies will need to obtain domiciliary commissioner approval for their chosen time horizon. Otherwise, the impact of cohorts that start withdrawals past the stochastic time horizon will not be modeled. If the intent is to not require approval, then the language should be modified.

3. Section A3.2)F)6) of the redline version of proposed AG43 states: “because the discount rate used in this determination is fixed, these calculations only need to be performed once for a given set of contracts with a certain issue age, guaranteed benefit product, and tax status.” We think these calculations would need to be performed more than once, since the mortality assumption is defined to include mortality improvement up to the valuation date. Therefore, the Guarantee Actuarial Present Values (GAPVs) would change at future valuation dates. We also suggest the language in this statement be updated to “...for a given set of contracts with a certain gender, issue age, guaranteed benefit product, and tax status.”
4. Guidance will be needed to address how to account for joint-life Guaranteed Minimum Withdrawal Benefits (GMWBs) when calculating the cohorts.
5. In the instructions for the method found in section A3.2)F)6), a step should be added between f) and g) to build an accumulated probability for each age (i.e., a CDF) from the individual withdrawal age probabilities.
6. The proposal applies weights to the account value and guarantee benefit bases for each piece and sums the results of the resulting weighted pieces. This can be a complicated approach, since any per policy factors will have to be carefully adjusted. This is even more complicated for any charge that has a tiered structure based upon the level of account value. If, for example, there is a \$50 annual policy fee if the account value is under \$50,000, and the weights are 20 percent, 50 percent, 30 percent then the three weighted pieces will each use a different policy fee; specifically \$10, \$25, and \$15 respectively. Also, there will have to be varying thresholds for charging the fee; \$5,000, \$25,000, and \$15,000. A simpler approach is to project the entire policy, and then apply the weights at the end of the process. This way the policy can be modeled simply using the \$50 annual policy fee if the account value was under \$50,000. For simplicity’s sake, companies should be allowed to use this alternate approach.
7. We suggest modifying the sentence in section A3.2)F)6)l) of the redline version of proposed AG43 that currently states: “The weight assigned to each of the cohorts constructed in A3.2)F)6)i) shall equal the revised GAPV<sup>2</sup> value of the corresponding initial withdrawal age less the revised GAPV<sup>2</sup> value of the initial withdrawal age in the preceding cohort (i.e., two years smaller).” We suggest that it say “The weight assigned to each of the cohorts constructed in A3.2)F)6)k) shall be increased by the weight of the corresponding initial withdrawal age one year smaller.” We believe this corrected language was the intended approach.

8. Sections A3.2)F)6)e) & A3.2)F)6)f) uses factors for hybrid Guaranteed Minimum Income Benefits (GMIBs) that are lower than those used for GMWB. We request more information about the source of this assumption, since it may not be reasonable to expect this relationship to persist.
9. Section A3.2)F)6)g) contains four factors to apply to the adjusted and scaled GAPV<sup>2</sup> values, but the sections that follow this do not consistently reflect these factors. In section A3.2)F)6)i), the factor should be .85 for a tax-qualified hybrid GMIB, and in section A3.2)F)6)m), the factor should be .15 for a tax-qualified hybrid GMIB and .40 for a non-qualified hybrid GMIB in order to make these sections more consistent with A3.2)F)6)g). More precise suggested language is shown in the Appendix. We believe this corrected language was the intended approach, as it treats the “never withdrawal” cohort consistently.

## II. Other Standard Projection Details

1. Section A3.2)F)3)g) of the redline version of the proposed AG43 states: “The GAPV for a GMDB that terminates at a certain age or in a certain policy year shall be calculated as if the GMDB does not terminate.” Clarification is requested as to whether the intent is for the calculation to assume that the Guaranteed Minimum Death Benefit (GMDB) never terminates. Having to model GAPV of Death Benefits (DBs) assuming the DBs continue beyond the otherwise contractual age limit runs counter to the general principle of modeling all benefits/riders per the contractual design.
2. Section A3.2)F)4) of the redline version of the proposed AG43, which addresses partial withdrawals, states that if the contract holder is past the initial withdrawal attained age, the partial withdrawal “shall not exceed the free partial withdrawal amount above which surrender charges are incurred”. This restriction may not be reasonable as this may readily occur when the contract holder is utilizing a withdrawal benefit. For example, consider a contract with \$60,000 of account value, a 10 percent free withdrawal, and a Maximum GMWB of \$12,000 annually which is currently being utilized. In this situation, the contract holder is likely to prefer to take the entire GMWB amount, which would be greater than the free partial withdrawal amount of only \$6,000 annually.

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We look forward to discussing these comments further. If you have any questions, please contact Ian Trepanier, life policy analyst at the American Academy of Actuaries. ([Trepanier@actuary.org](mailto:Trepanier@actuary.org))

Sincerely,

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Chairperson, AG43/C3 Phase II Work Group  
American Academy of Actuaries

## APPENDIX

g) For contracts that offer guaranteed growth in the benefit basis or one-time bonuses to the benefit basis, add the following to the adjusted and scaled  $GAPV^2$  values corresponding to the initial withdrawal age that occurs immediately after the termination of the guaranteed growth or the one-time bonus. If there is more than one such initial withdrawal age, the addition shall be made to the initial withdrawal age with the higher  $GAPV$ .

$$0.35 \times \begin{cases} 0.95 - GAPV_{Adjusted,Scaled}^2, & \text{if policy is a tax-qualified GMWB} \\ 0.80 - GAPV_{Adjusted,Scaled}^2, & \text{if policy is non-qualified GMWB} \\ 0.85 - GAPV_{Adjusted,Scaled}^2, & \text{if policy is a tax-qualified hybrid GMIB} \\ 0.60 - GAPV_{Adjusted,Scaled}^2, & \text{if policy is non-qualified hybrid GMIB} \end{cases}$$

h) Scale the remainder of the adjusted and scaled  $GAPV^2$  values such that the sum of the revised  $GAPV^2$  values equals 0.95 for tax-qualified GMWB policies, 0.80 for non-qualified GMWB policies, 0.85 for tax-qualified hybrid GMIB policies, and 0.60 for non-qualified hybrid GMIB policies.

i) For tax-qualified GMWB policies, add to the revised  $GAPV^2$  corresponding to an initial withdrawal age of 71 an amount equal to 50% of the difference between 0.95 and the revised  $GAPV^2$  at that initial withdrawal age. For tax-qualified hybrid GMIB policies, add to the revised  $GAPV^2$  corresponding to an initial withdrawal age of 71 an amount equal to 50% of the difference between 0.85 and the revised  $GAPV^2$  at that initial withdrawal age.

j) Scale the remainder of the revised  $GAPV^2$  values such that the sum of the revised  $GAPV^2$  values equals 0.95 for tax-qualified GMWB policies and 0.85 for tax-qualified hybrid GMIB policies again.

k) For odd-numbered issue ages, discard the initial withdrawal ages that are odd-numbered, and for even-numbered issue ages, discard initial withdrawal ages that are even-numbered. One cohort shall subsequently be constructed for each of the remaining initial withdrawal ages.

l) The weight assigned to each of the cohorts constructed in A3.2)F)6)i) shall equal the revised  $GAPV^2$  value of the corresponding initial withdrawal age less the revised  $GAPV^2$  value of the initial withdrawal age in the preceding cohort (i.e., two years smaller).

m) Construct a final cohort that is modeled not to take a partial withdrawal in the contract lifetime. This final cohort (“never withdrawal cohort”) shall be assigned a weight of 0.05 for tax-qualified GMWB policies ~~and~~ 0.20 for non-qualified GMWB policies, 0.15 for tax-qualified hybrid GMIB policies, and 0.40 for non-qualified hybrid GMIB policies.