Life Actuarial (A) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

   Dave Neve, chairperson of the American Academy of Actuaries Life Reserves Work Group.

2. Identify the document, including the date if the document is "released for comment," and the location in the document where the amendment is proposed: VM-20:

   Section 9C for Principle-based Reserves for Life Products, Draft dated 12/2/2012, sections 4, 5 and 7.

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on "track changes" in Word®) version of the verbiage. (You may do this through an attachment.)

   Please see Appendix A.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

Proposal Summary

This amendment proposal would modify VM-20 to change the method for recognizing the effect of the Pre-tax Investment Maintenance Reserve ("PIMR") when calculating the Deterministic Reserve ("DR") and the Stochastic reserve ("SR"). The revised method simplifies the calculation of the DR and SR, and the reserves produced under this revision are equivalent to the reserves produced under the current VM-20 rules.

Background

The VM-20 reserve methodology (for both DR and SR) recognizes that IMR is redundant under a PBR regime as principle-based reserves are designed to adjust to changing economic environments and the characteristics of the assets backing the liabilities. Thus, the current VM-20 rules attempt to reverse the impact on surplus of recognized PIMR related to the asset segment supporting the liabilities. For the DR, the way this is done (in the case of positive PIMR) is by adding PIMR amortization to the numerator of the Net Asset Earned Rates ("NAERs") and subtracting the PIMR beginning balance from the denominator of the NAERs projected in the asset-liability cash flow model. Both adjustments serve to increase the discount factors and consequently reduce the PVs of the modeled cash flows that determine the DR. *The insight is that the VM-20 method is designed to reduce/increase the DR in the amount of the positive/negative PIMR allocated to the model.* Viewed another way, VM-20 effectively allocates assets backing positive PIMR to the modeling of the DR.

Proposal for Modifying the VM-20 DR and SR Calculations

This amendment proposal would modify VM-20 to change the method for recognizing the effect of the Pre-tax Investment Maintenance Reserve ("PIMR") when calculating the Deterministic Reserve ("DR") and the Stochastic reserve ("SR"). With respect to the DR, the proposed method is to forgo adjusting the

modeled reserve through the modification of the NAERs and simply make a direct post-calculation reduction/increase to the modeled reserve in the amount of the positive/negative PIMR. With respect to the SR, the proposed method is to forgo adjusting the modeled statutory asset values at all projection durations for unamortized PIMR (arising from PIMR amounts existing at the start of a projection and amounts arising as a result of capital gains and losses occurring during a projection) and again simply make a direct post-calculation reduction/increase to the final CTE 70 reserve in the amount of the allocated PIMR.

Reasons for Revising VM-20

1. Mathematically, this revision produces equivalent reserves compared to those currently produced under VM-20.

2. The current VM-20 process is not transparent and the complexity of the process lends itself to errors. The effect of the VM-20 treatment of PIMR is poorly understood by many and will be a source of concern in practice. In the Impact Studies performed to date, companies ignored PIMR primarily due to complexity in its application. The alternative method proposed here is simple, direct and transparent.

3. Application of the current VM-20 method requires that dedicated PIMR amortization schedules be maintained and incorporated into the reserve calculations. This is avoided under the revised method.

4. Requiring starting PIMR to be modeled suggests that future PIMR developing at future projection durations should be modeled as well (VM-20 adopts this position). This creates more concerns:

    a. Including future PIMR in PBR models creates additional layers of unnecessary complexity.

    b. In projections where an asset sale results in capital gains that are used immediately for policy obligations and not reinvested, PIMR arguably should not be recognized.

    c. PIMR amortization may extend beyond a projection horizon, causing inaccuracies in the calculation of the reserve.

Appendix A

VM-01: DEFINITIONS FOR TERMS IN REQUIREMENTS

41. The term "pretax interest maintenance reserve" or "PIMR" means the statutory interest maintenance reserve liability adjusted to a pretax basis for each model segment at the projection start date ~~and at the end of each projection interval~~. (Used in VM-20)

VM-20: REQUIREMENTS FOR PRINCIPLE-BASED RESERVES FOR LIFE PRODUCTS

Section 1.   Purpose and Definitions

15. The term "pretax interest maintenance reserve" or "PIMR" means the statutory interest maintenance reserve liability adjusted to a pre-tax basis for each model segment at the projection start date ~~and at the end of each projection interval~~.

Section 4.   Deterministic Reserve - For a group of one or more policies for which a deterministic reserve must be calculated pursuant to Sections 2.A or 2.B, the company shall calculate the deterministic reserve for the group as follows:

A. Calculate the deterministic reserve equal to the actuarial present value of benefits, expenses, and related amounts less the actuarial present value of premiums and related amounts, less the positive or negative PIMR balance allocated to the group of one or more policies being modeled under Section 7.D.5, where:

1. Cash flows are projected in compliance with the applicable requirements in Sections 7, 8 and 9 over the single economic scenario described in Section 7.G.1.

2. Present values are calculated using the path of discount rates for the corresponding model segment determined in compliance with Section 7.H.4

3. The actuarial present value of benefits, expenses and related amount equals the sum of

   a. Present value of future benefits, but before netting the repayment of any policy loans; **Guidance Note:** Future benefits include but are not limited to death and cash surrender benefits.

   b. Present value of future expenses excluding federal income taxes and expenses paid to provide fraternal benefits in lieu of federal income taxes;

   c. Policy account value invested in the separate account at the valuation date; and

   Guidance Note: when paragraph c. is taken in conjunction with 4.b. below, the net result produces the correct cash flows as well as NAER,

   d. Policy loan balance at the valuation date with appropriate reflection of any relevant due, accrued or unearned loan interest, if policy loans are explicitly modeled under Section 7.E.

Guidance Note: when paragraph d. is taken in conjunction with 4.c. below, the net result produces the correct cash flows as well as NAER,

4. The actuarial present value of premiums and related amounts equals the sum of the present values of

   a. Future gross premium payments and/or other applicable revenue;

   b. Future net cash flows to or from the general account, or from or to the separate account;

   c. Future net policy loan cash flows, if policy loans are explicitly modeled under Section 7.E;

      Guidance Note: Future net policy loan cash flows include: loan interest paid in cash; additional loan principal; and repayments of principal, including repayments occurring at death or surrender (note that the future benefits in Section 4.A.3.a are before consideration of policy loans).

   d. Future net reinsurance discrete cash flows determined in compliance with Section 8;

   e. The future net reinsurance aggregate cash flows allocated to this group of policies as described in Subsection B of this section; and

   f. The future derivative liability program net cash flows (i.e., cash received minus cash paid) that are allocated to this group of policies.

5. If a group of policies is excluded from the stochastic reserve requirements, the company may not include future transactions associated with non-hedging derivative programs in determining the deterministic reserve for those policies.

Section 5.   Stochastic Reserve

The company shall calculate the stochastic reserve for all policies (pursuant to section 2.A) or for a group of policies (pursuant to section 2.B) as follows:

A.   Project cash flows in compliance with the applicable requirements in Sections 7, 8 and 9 using the stochastically generated scenarios described in Section 7.G.2.

B.   Calculate the scenario reserve for each stochastically generated scenario as follows:

1. For each model segment at the model start date and end of each projection year, calculate the discounted value of the negative of the projected statement value of general account and separate account assets using the path of discount rates for the model segment determined in compliance with Section 7.H.5 from the projection start date to the end of the respective projection year.

   Guidance Note: The projected statement value of general account and separate account assets for a model segment may be negative or positive.

2. Sum the amounts calculated in Subparagraph 1 above across all model segments at the model start date and end of each projection year.

   Guidance Note: The amount in Subparagraph 2 above may be negative or positive.

3. Set the scenario reserve equal to the sum of the statement value of the starting assets across all model segments and the maximum of the amounts calculated in Subparagraph 2 above.

C. Rank the scenario reserves from lowest to highest.

D. Calculate CTE 70.

E. Determine any additional amount needed to capture any material risk included in the scope of these requirements but not already reflected in the cash flow models using an appropriate and supportable method and supporting rationale.

F. Add the CTE amount (D) plus any additional amount (E) less the positive or negative PIMR balance allocated to the group of one or more policies being modeled under Section 7.D.5.

G. The stochastic reserve equals the amount determined in Subsection 5.F. If the company defines two or more subgroups for aggregation purposes as described in Section 7.B.3., the company shall calculate the amount determined in Section 5.F for each subgroup of policies

Section 7. Cash Flow Models

D. Starting Assets

1. For each model segment, the company shall select starting assets such that the aggregate annual statement value of the assets at the projection start date equals the estimated value of the minimum reserve allocated to the policies in the appropriate model segment subject to the following:

   a. Starting asset values shall include the relevant balance of any due, accrued or unearned investment income.

   b. For an asset portfolio that supports both policies that are subject and not subject to these requirements, the company shall determine an equitable method to apportion the total amount of starting assets between the subject and non-subject policies

   c. If for all model segments combined, the aggregate annual statement value of starting assets is less than 98% or greater than the larger of NPR or 102% of the final aggregate modeled (whether stochastic or deterministic) reserve, the company shall provide documentation in the PBR Actuarial Report that provides reasonable assurance that the aggregate modeled reserve is not materially understated as a result of the estimate of the amount of starting assets.

2. The company shall select starting assets for each model segment that consists of the following:

   a. All separate account assets supporting the policies.

   b. All policy loans supporting the policies that are explicitly modeled under Section 7.E.

   c. All derivative instruments held at the projection start date that are part of a derivative program and can be appropriately allocated to the model segment.

The negative of any pretax interest maintenance reserve liability that can be allocated to each model segment at the projection start date subject to the following:

The amount of PIMR allocable to each model segment is the approximate statutory interest maintenance reserve liability that would have developed for the model segment assuming applicable capital gains taxes

are excluded. The allocable PIMR may be either positive or negative, resulting in either a decrease or increase to starting assets.

In performing the allocation In performing the allocation to each model segment, the company shall use a reasonable approach to allocate any portion of the total company balance that is disallowable under statutory accounting procedures (i.e., when the total company balance is an asset rather than a liability).

The company may use a simplified approach to allocate the PIMR, if the impact of the PIMR on the minimum reserve is minimal.

    d. An amount of other general account assets such that the aggregate value of starting assets meets the requirements in Section 7.D.1. These assets shall generally be selected on a consistent basis from one reserve valuation to the next. Any material change in the selection methodology shall be documented in the PBR Actuarial Report.

3. The aggregate value of general account starting assets is the sum of the amounts in subsections 7.D.2.b through 7.D.2.ed above.

Guidance Note: The aggregate value of general account assets in subsection 7.D.3 may be negative. This may occur for example for model segments in which a substantial portion of policyholder funds are allocated to separate accounts. The assets in subsection 7.D2.e above may include negative assets or short-term borrowing, resulting in a projected interest expense.

4. The company shall calculate the projected values of starting assets in a manner consistent with their values at the start of the projection.

When calculating the projected statement value of assets at any date, the company shall include the negative of any outstanding PIMR. For purposes of these requirements, the projected PIMR for any model segment and for all model segments combined may be negative.

5. Under Sections 4 and 5, any pre-tax interest maintenance reserve ("PIMR") balance allocated to the group of one or more policies being modeled at the projection start date is included in the calculations of the respective reserves. The determination of the PIMR allocation is subject to the following:

    i. The amount of PIMR allocable to each model segment is the approximate statutory interest maintenance reserve liability that would have developed for the model segment assuming applicable capital gains taxes are excluded. The allocable PIMR may be either positive or negative.

    ii. In performing the allocation to each model segment, the company shall use a reasonable approach to allocate any portion of the total company balance that is disallowable under statutory accounting procedures (i.e., when the total company balance is an asset rather than a liability).

    iii. The company may use a simplified approach to allocate the PIMR, if the impact of the PIMR on the minimum reserve is minimal.

(Section 7 continued)

H. Determination of Net Asset Earned Rates and Discount Rates

1. In calculating the deterministic reserve the company shall determine a path of net asset earned rates for each model segment that reflects the net general account portfolio rate in each projection interval (i.e., monthly, quarterly, annually) in compliance with Section 7, which will depend primarily on:

    a. Projected net investment earnings from the portfolio of starting assets.

    b. Pattern of projected asset cash flows from the starting assets and subsequent reinvestment assets.

    c. Pattern of net liability cash flows.

    d. Projected net investment earnings from reinvestment assets.

2. The company shall calculate the net asset earned rate as the ratio of net investment earnings divided by invested assets subject to the requirements in a. ~~fc~~.. All items reflected in the ratio are consistent with statutory asset valuation and accrual accounting, including reflection of due, accrued or unearned investment income where appropriate.

    a. The impact of separate accounts and policy loans is excluded.

    b. The net asset earned rate for each projection interval is calculated in a manner that is consistent with the timing of cash flows and length of the projection interval of the related cash flow model.

    c. Net investment earnings include:

        i.   Investment income plus capital gains and losses ~~(excluding capital gains and losses that are included in the PIMR)~~, minus appropriate default costs and investment expenses; and

        ii. Income from derivative asset programs.~~; and~~

~~Amortization of the PIMR~~

    d. Invested assets are determined in a manner that is consistent with the timing of cash flows within the cash flow model and the length of the projection interval of the cash flow model.

~~Invested assets are adjusted to reflect the negative of the outstanding PIMR~~

    e. The annual statement value of derivative instruments or a reasonable approximation thereof is in invested assets.

    All items reflected in the ratio are consistent with statutory asset valuation and accrual accounting, including reflection of due, accrued or unearned investment income where appropriate.

3. The company may use a grouped liability model to calculate the path of net asset earned rates for the deterministic reserve and then perform the seriatim reserve calculation for each policy based on those net asset earned rates.

Guidance Note: Section 7.A.2 permits the use of modeling efficiency techniques to calculate the deterministic reserve and stochastic reserve. This availability for simplification includes ways to determine appropriate net asset earned rates. Small to intermediate size companies, or any size company with smaller blocks of business, have options to create net asset earned rates with modeling efficiency techniques if the results are consistent with Section 2.H.

4. The company shall use the path of net asset earned rates as the discount rates for each model segment in the deterministic reserve calculations in Section 4, and the stochastic exclusion test in Section 6.

5. The company shall use the path of one-year U.S. Treasury interest rates in effect at the beginning of each projection year multiplied by 1.05 for each model segment within each scenario as the discount rates in the stochastic reserve calculations in Section 5.

Guidance Note: The use of different discount rate paths for the seriatim and scenario reserves is driven by differences in methodology. The seriatim reserve is based on a present value of all liability cash flows, with the discount rates reflecting the investment returns of the assets backing the liabilities. The scenario reserve is based on a starting estimate of the reserve, and assets that support that estimate, plus the greatest present value of accumulated deficiencies. Here, the discount rates are a standard estimate of the investment returns of only the marginal assets needed to eliminate either a positive or negative deficiency.

Future Pretax Interest Maintenance Reserve Amounts

The company shall spread realized capital gains and losses arising from changes in interest rates over future projection intervals by establishing a new PIMR amount and future amortization schedule in a manner that is reasonably consistent with statutory accounting procedures under the assumption that capital gains tax is zero.