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Felix Schirripa
Chair, VM-22 (A) Subgroup
Life Actuarial Task Force (LATF)
National Association of Insurance Commissioners

Dear Mr. Schirripa:

The VM-22 drafting subgroup of the Annuity Reserve Work Group (ARWG) of the American Academy of Actuaries[1] is pleased to provide LATF's VM-22 subgroup with drafts for two sections of VM-22, making progress toward fulfilling the charge made by LATF at its Spring 2012 meeting in New Orleans to the ARWG to develop a draft of VM-22 covering all non-variable annuities and deposit funds.

Section 2 describes the Minimum Reserve and Section 3 describes the Floor Reserve.

Please contact Scot Davies, the Academy's life policy analyst (davies@actuary.org; 202-223-8196) if you have any questions.

Sincerely,

Corinne Jacobson, MAAA, FSA
Chair, VM-22 Subgroup

[1] The American Academy of Actuaries is an 18,500+ member professional association whose mission is to serve the public and the U.S. actuarial profession. The Academy assists 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.

Section 2. Reserve Methodology

Drafting Note: The following terms need to be defined in Section 1:
- Floor Reserve Amount
- Modeled Reserve
- Model Segment

A. General Description

The Minimum Reserve for contracts falling within the scope of these requirements shall equal the Modeled Reserve but not less than the Floor Reserve Amount, where the Minimum Reserve is calculated as the Floor Reserve Amount plus the excess, if any, of the Modeled Reserve over the Floor Reserve Amount.

Drafting Note: This definition is consistent with that of the Minimum Reserve in VM-21.

B. Impact of Reinsurance Ceded

Where reinsurance is ceded for all or a portion of the contracts, both components in the above general description (and thus the Minimum Reserve) shall be determined net of any reinsurance treaties that meet the statutory requirements that would allow the treaty to be accounted for as reinsurance.

A Minimum Reserve before reinsurance shall also be calculated if needed for regulatory reporting or other purposes, using methods described in Section 6.

C. The Floor Reserve Amount.

The Floor Reserve Amount refers to the sum over all contracts of the Floor Reserve determined for each contract falling within the scope of these requirements as of the statement date. The Floor Reserve method is outlined in Section 3.

D. The Modeled Reserve.

The Modeled Reserve method is outlined in Section 4.

E. Allocation of Results to Contracts.

The Minimum Reserve shall be allocated to the contracts falling within the scope of these requirements as follows:

Drafting Note: This allocation method is consistent with that in VM-21, although the words used to describe E.2.b. below are different than those used in VM-21.

1. Allocation when the Minimum Reserve equals the Floor Reserve Amount

   a. The Floor Reserve is calculated on a contract-by-contract basis, as described in Section 3. Therefore, when the Minimum Reserve is equal to the Floor Reserve Amount, the reserve allocated to each contract shall be the reserve calculated for each contract under the Floor Reserve method.

2. Allocation when the Minimum Reserve equals the Modeled Reserve

   a. Single Model Segment. When the Minimum Reserve is equal to the Modeled Reserve and the Modeled Reserve is determined in aggregate for all contracts falling within the scope of these requirements (i.e., a single Model Segment), the excess of the Modeled Reserve over the Floor Reserve Amount shall be allocated to each contract on the basis of the difference between the Floor Reserve and FR3, as defined in Section 3D., on the statement date for the contract.
   b. Multiple Model Segments. When the Minimum Reserve is equal to the Modeled Reserve and the Modeled Reserve is determined using more than one Model Segment, as defined in Section 4, the allocation of the excess of the Modeled Reserve over the Floor Reserve Amount shall be allocated to the contracts as follows:

      i. For each Model Segment, calculate the excess of the portion of the Modeled Reserve for that Model Segment over the sum of the Floor Reserves for the contracts contained in that Model Segment. If the excess is less than zero, set the excess for that Model Segment equal to zero.
      ii. Calculate the sum of all of the excesses determined in E.2.b.i. above.
      iii. Allocate the excess of the Modeled Reserve over the Floor Reserve Amount to each Model Segment in relation to the ratio of the amount determined in E.2.b.i.for that particular Model Segment to the amount determined in E.2.b.ii.
      iv. Within each Model Segment, allocate the amount determined in E.2.b.ii. to each contract contained in that Model Segment on the basis of the difference between the Floor Reserve and FR3 for each contract, as defined in Section 3.D., on the statement date.

Drafting Note: E.2.b.ii. above ensures that no excess is allocated to Model Segments where the sum of the Floor Reserves for the contracts contained in that Model Segment exceeds the Modeled Reserve for that Model Segment.

Section 3. Floor Reserve

Drafting Note: The following terms need to be defined in Section 1:

- Block
- Terminal Age
  - o The attained age at which all remaining contracts are assumed to utilize the Listed Benefit.
- Basic Utilization Table
- ITM-ness
- Listed Benefit
  - o A product feature specifically included in the Listed Benefits list in Appendix [xxx].

A. Background

This section defines the contract-level Floor Reserve, hereafter also referred to simply as the Floor Reserve. The Floor Reserve Amount refers to the sum, over all contracts to which VM-22 is applicable, of the Floor Reserve determined for each contract as of the statement date.

Drafting Note: The definition of the Floor Reserve Amount is consistent with the definition of the Aggregate Reserve found in VM-21.

Drafting Note: The Floor Reserve serves as a yardstick with which to establish a reasonable floor for the Minimum Reserve. Since the Minimum Reserve is the Floor Reserve Amount plus the excess, if any, of the Modeled Reserve over the Floor Reserve Amount, it is not necessary that the Floor Reserve be an adequate reserve for each contract valued.

The Floor Reserve formula is as follows:

$$\text{Floor Reserve} = \text{Maximum}\ \{\ FR1, FR2, FR3\ \}$$

In other words, the value of the Floor Reserve for a contract is the greatest of the Floor Reserve 1 (FR1), Floor Reserve 2 (FR2) and Floor Reserve 3 (FR3). Calculation specifics for FR1, FR2, and FR3 are as stated in subsections B, C, and D in this Section 3.

The fundamental principle for the calculation of FR1 is to measure the greatest present value of an Integrated Benefit Stream that takes account of all guaranteed contract benefits and charges other than those related to the Listed Benefits.

On the other hand, the calculation of FR2 assumes that all contractholders with Listed Benefits will elect to exercise those benefits at some point in the future, unless death occurs prior to any election and the contract pays the associated benefit.

Finally, FR3 is based on the amount currently available for the contractholder to withdraw from the contract on the statement date.

B. Calculation of Floor Reserve 1

The value of FR1 shall be calculated using CRVM or CARVM requirements in effect prior to the effective date of VM-22, along with the use of appropriate guidelines (e.g., Actuarial Guidelines 9, 33, 35) as applicable, with the assumption that any Listed Benefits have no effect on future projected and discounted values prescribed therein, either with respect to benefits or charges.

Drafting Note: If contract values used in the determination of non-Listed Benefits are dependent on contract values associated with a Listed Benefit, then contract values associated with that Listed Benefit must be considered in the determination of FR1. For example, a single contract may have a Guaranteed Lifetime Income Benefit (GLIB) and an enhanced death benefit that both are based on a single benefit base. The Annuity Reserves Work Group (ARWG) considers the GLIB as a Listed Benefit but not the enhanced death benefit, so the enhanced death benefit must therefore be valued in FR1. Thus, the underlying benefit base must also be valued in FR1, although no GLIB withdrawals will be assumed to occur in FR1.

Drafting Note: Since Guaranteed Investment Contracts (GICs) are covered under CRVM, the reference to CRVM was included.

Guidance Note: Benefits paid and charges made prior to the statement date will have affected the Account Value as of the statement date.

Drafting Note: Since the Modeled Reserve is the principle-based component of this reserve, the ARWG believes that the Floor Reserve should not always dominate over the Modeled Reserve. After more analysis is performed, the ARWG may recommend changes to the assumptions or recommend additional parameters (such as lapse rates) in the calculations of FR1 and FR2. For more details on the formulas, please refer to the August 2013 ARWG report to LATF's VM-22 subgroup.

C. Calculation of Floor Reserve 2

1. Introduction

CARVM requirements as interpreted by Actuarial Guideline 33 in effect prior to the effective date of VM-22 state that all future Integrated Benefit Streams must be considered, including the situation where 100% of the surviving contractholders elect the Listed Benefit at the time of the greatest present value of the benefit, regardless of other considerations. In contrast, FR2 is the present value of a single integrated benefit stream for each Listed Benefit and assumes that any Listed Benefit on a contract is utilized by the contractholder at some point according to a single prescribed set of incidence rates, called the Listed Benefit Utilization Function (LBUF), unless the contract is terminated due to death.

Guidance Note: According to CARVM requirements as interpreted by Actuarial Guideline 33, adjustments must be made to any integrated benefit stream to reflect death benefits and all benefits must be discounted for survivorship (based on the mortality table prescribed in the Standard Valuation Law). This is applicable for FR2 as well as FR1.

Appendix [xxx] of this Section contains a list of Listed Benefits and their corresponding LBUFs. If a contract feature is not included in that list, it must be included in FR1 and it cannot be included in FR2.

Drafting Note: The ARWG is willing to assist the NAIC in reviewing product features and in developing LBUFs.

2. FR2 Calculation Rules

   a. Each Listed Benefit is assumed to be elected according to its corresponding LBUF as described in Appendix [xxx].
   b. If a single contract has multiple Listed Benefits (labeled 1 through n), $FR2_k$ shall be calculated for each Listed Benefit k (where k = 1 to n) ignoring all other Listed Benefits. FR2 then equals the maximum of $FR2_1$, $FR2_2$, …, $FR2_n$.
   c. FR2 needs to reflect any amounts paid upon death, both prior to and after the election of the Listed Benefit, corresponding to the mortality decrement.
   d. If contract ownership is single life, use appropriate single life valuation mortality prior to the assumed election of the Listed Benefit.
   e. If contract ownership is joint life, use appropriate joint life valuation mortality prior to the assumed election of the Listed Benefit.
   f. For Listed Benefits, use the valuation interest rates specified by the Standard Valuation Law, using Plan Type A as of the issue date of the contract and a Guarantee Duration corresponding to the number of years from the original issue date to the date the Listed Benefit is assumed to commence.

Drafting Note: Plan Type A is appropriate because FR2 assumes the contractholder will utilize the Listed Benefit at some time unless he dies first; i.e., he is not going to surrender or annuitize or take any other type of withdrawal. The use of Plan Type A is consistent with VM-21; the definition of Guarantee Duration is different than that in VM-21.

   g. Listed Benefits shall be reflected only for those years in which they can be elected.
   h. Joint Listed Benefits must be considered if the joint option is available.

D. Calculation of Floor Reserve 3

The value of FR3 shall be determined for each contract on a seriatim basis as follows:

1. If the contract is subject to the Standard Nonforfeiture Law, then FR3 shall be set equal to the Nonforfeiture Value as of the statement date; otherwise
2. If the Standard Nonforfeiture Law does not apply to a contract but the contract has an option to surrender, then FR3 shall be set equal to the Cash Surrender Value as of the statement date; otherwise
3. If the Standard Nonforfeiture Law does not apply to a contract and the contract has no option to surrender, then FR3 shall be set equal to the contractually-defined Account Value as of the statement date; otherwise
4. If the Standard Nonforfeiture Law does not apply to a contract, the contract has no option to surrender, and the contract has no contractually-defined Account Value, then FR3 shall be set equal to zero.

Drafting Note: 3.D.3. above was included to capture deposit funds, such as funding agreements and Guaranteed Investment Contracts (GICs).

Drafting Note: 3.D.4. above was included to capture contracts such payout annuities. Recall that such contracts still will have nonzero values for FR1 and / or FR2.

Appendix xxx Listed Benefits Discussion

Drafting Note: The ARWG is willing to assist the NAIC with determining the essential features of a Listed Benefit. Any guidance the NAIC wishes to provide for when a product feature may be considered a Listed Benefit can be included here.

A. Introduction

The development of additional product features for both deferred and immediate annuity contractholders has led to the provision for Listed Benefits in Section VM-22 of the Valuation Manual. For the Floor Reserve calculations in VM-22, each Listed Benefit is assumed to be elected according to a dynamic Listed Benefit Utilization Function that reflects key factors relevant to the contractholders' benefit utilization decisions.

For a product feature to be excluded from FR1 and included in FR2, it must be identified in this Appendix as a Listed Benefit and a corresponding Listed Benefit Utilization Function (LBUF) must be defined.

B. Listed Benefits

The following features are considered Listed Benefits:

- Guaranteed Lifetime Income Benefits (GLIBs)
- The tier of a two-tier annuity that is used for annuitization purposes (with the other tier used for computing the cash surrender benefit)

Other benefits may be added in the future.

C. Listed Benefit Utilization Functions (LBUFs)

This section defines the LBUFs to be used for each Listed Benefit in the calculation of FR2.

Depending upon the nature of a particular Listed Benefit, several factors might impact the development of a LBUF, including but not limited to:

1. The development of industry experience with margins as appropriate to be used to create the prescribed Basic Utilization Table for the Listed Benefit.
2. The determination of the "in-the-moneyness" (ITM) of the Listed Benefit. (The LBUF shall prescribe how the ITM adjustments are applied to the Basic Utilization Table).
3. The relative richness of joint life benefits, if available.
4. The determination of a Terminal Age at which all remaining contractholders are assumed to utilize the Listed Benefit.
5. The ability of contractholders to look forward and recognize the value of significantly higher future benefits.
6. The determination of the impact of the contractholder tax status on election rates of the Listed Benefit.
7. The understanding that contract provisions (e.g., waiting periods) supersede all other elements in the operation of the LBUF with respect to a particular contract.

1 Guaranteed Lifetime Income Benefits (GLIBs)

Drafting Note: The ARWG participated in the development of the LBUF for GLIBs for the Kansas Field Test. The Field Test report will include the details of this LBUF. Once the ARWG has reviewed the LBUF, a recommendation will be included in this appendix.

2 Annuitization Tier of a Two-Tier Annuity

Drafting Note: Once the NAIC has determined the LBUF for the annuitization tier, it will be included here.