Revised Appendix 6, Policyholder Behavior Data Format

Adopted by Life Actuarial (A) Task Force: 5/21/13

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Appendix 6, Policyholder Behavior Data Format
(This format is a continuation of Appendix 4, Mortality Data Format)

ITEM	COLUMN	L	DATA ELEMENT	DESCRIPTION
28	135 – 144	10	Level Term Annualized Premium at Issue	For each segment of Level Term Insurance Plans with plan codes 021 through 045 or 211 through 271 of Item 19, Plan, of VM-51 Appendix 4, Mortality Format, enter the annualized premium set at issue. 1~~) For Item 19 categories of Traditional Whole Life Plans and Term Insurance Plans: Enter the premium amount required to maintain the policy inforce.~~ ~~2) For Item 19 categories of Universal Life Plans and Variable Life Plans: Enter the planned premium.~~ ~~3) For Item 19 categories of Universal Life Plans with Secondary Guarantees and Variable Life Plans with Secondary Guarantees: Enter the premium amount required to maintain the no lapse guarantee.~~ ~~4)~~ If unknown, leave blank.
~~29~~	~~145 – 146~~	2	~~Current Level Term Period~~	~~The Current Level Term Period:~~ ~~– is determined when the policy was issued, and~~ ~~– specifies the number of years for a term life policy that guarantees level premiums until a specified duration and then substantially increase or for other life products where premium payments are expected to be level until a specified duration and then substantially increase.~~ ~~If the segment does not involve a plan with a Current Level Term Period, leave blank.~~ ~~If unknown, leave blank.~~
~~28~~29~~30~~	~~135~~ 145 ~~144~~154	10	Term Annualized Premium at the Beginning of Observation Year	For segments with plan codes 021 through 045 or 211 through 271 of Item 19, Plan, of VM-51 Appendix 4, Mortality Format,~~For each segment,~~ enter the annualized premium for the policy year that includes the beginning of the observation year. ~~For UL and VUL, use the annualized billed~~

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Comment [MI1]: The 'Current Level Term Period' item is being replaced in Item 19, Plan, of VM-51 Appendix 4, Mortality Format by the addition of plan codes for current level term products.

Appendix 6, Policyholder Behavior Data Format
(This format is a continuation of Appendix 4, Mortality Data Format)

ITEM	COLUMN	L	DATA ELEMENT	DESCRIPTION
				~~premium.~~ Round to the nearest dollar. If there is no premium, enter blank.
~~29~~30~~1~~	~~145~~ 155 - ~~154~~164	10	Term Annualized Premium at the End of Observation Year/ Actual Termination Date	For segments with plan codes 021 through 045 or 211 through 271 of Item 19, Plan, of VM-51 Appendix 4, Mortality Format,~~For each segment~~, enter the annualized premium for the policy year that includes either 1) the end of the observation year or 2) the Actual Termination Date. ~~For UL and VUL, use the annualized billed premium.~~ Round to the nearest dollar. If there is no premium, enter blank.
31	~~447~~165 - ~~448~~166	2	Premium Mode	1 = Annual 2 = Semiannual 3 = Quarterly 4 = Monthly Bill Sent 5 = Monthly Automatic Payment 6 = Semimonthly 7 = Biweekly 8 = Weekly 9 = Single Premium 10 = Other / Unknown

Note: For Appendix 6 - Policyholder Behavior Format, all of the other items that had been in the exposed version of Appendix 6 – Policyholder Behavior Format have been deleted.

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Clarify the modeling of policy loan cash flows in the DR and SR calculations

Adopted by Life Actuarial (A) Task Force: 8/22/13

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life and Health Actuarial 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.

   Clarification to the approach in VM-20 to model policy loan cash flows in the deterministic reserve and stochastic reserve calculations.

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: Requirements for Principle-based Reserves for Life Products, Draft dated 12/2/2012, Sections 4A and 7F.

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.)

   See attached document. Also attached is output from an Excel spreadsheet that gives a simple example.

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

   The purpose is to provide greater clarity in the approach described in VM-20 to model policy loan cash flows. These changes do not modify the current requirements in VM-20 on how policy loan cash flows are to be modeled; it only provides greater clarity to these requirements.

   The treatment of policy loans in VM-20 is somewhat non-intuitive. Key points in the current VM-20 approach to model policy loan cash flows are:

   - The initial policy loan balance is treated as a benefit cash flow at time zero.
   - Future policy loan interest (if paid in cash) and principal repayments are treated as positive cash flows, and new loan principal amounts are treated as negative cash flows.

   Attached are two examples that illustrate the policy loan cash flows used in the calculation of the deterministic reserve. The first example assumes the policy loan interest rate is equal to the Net Asset Earned Rate (NAER). In this example, there is no impact on the deterministic reserve (i.e. the PV of the policy loan cash flows net to zero). The second example shows the impact on the deterministic reserve when the policy loan interest rate is greater than the NAER. In this case, the deterministic reserve is reduced (i.e. the PV of the policy loan cash flows is negative).

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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 where:

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.

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.~~F.3.

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~~F.3;

Guidance Note: Future net policy loan cash flows include: policy loan interest paid in cash plus ~~;~~ ~~additional loan principal; and~~ repayments of policy loan 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), less additional policy loan principal. ~~.~~

Section 7. Cash Flow Models

F. Cash Flows from Invested Assets

The company shall determine cash flows from invested assets, including starting and reinvestment assets, as follows:

3. Determine cash flows for each projection interval for policy loan assets by modeling existing loan balances either explicitly, or by substituting assets that are a proxy for policy loans (e.g., bonds, cash, etc.) subject to the following:

a. If the company substitutes assets that are a proxy for policy loans, the company must demonstrate that such substitution

i. Produces reserves that are no less than those produced by modeling existing loan balances explicitly; and

ii. Complies with the policyholder behavior requirements stated in Section 9.D.

b. If the company models policy loans explicitly, the company shall:

i. Treat policy loan activity as an aspect of policyholder behavior and subject to the requirements of Section 9.D.

ii. For both the deterministic reserve and the stochastic reserve, assign loan balances either to exactly match each policy's utilization or to reflect average utilization over a model segment or sub-segments.

iii. Model policy loan interest in a manner consistent with policy provisions and with the scenario. In calculating the deterministic reserve and stochastic reserve, include interest paid in cash as a positive policy loan cash flow in that projection interval, per Section 4.A.4, but do not include interest added to the loan balance as a policy loan cash flow (the increased balance will require increased repayment cash flows in future projection intervals).

iv. Model policy loan principal repayments, including those which occur automatically upon death or surrender, In calculating the deterministic reserve and stochastic reserve, include policy loan principal repayments as a positive policy loan cash flow, per Section 4.A.4.

v. – Model additional policy loan principal. In calculating the deterministic reserve and stochastic reserve, include additional policy loan principal as a negative policy loan cash flow, per Section 4.A.4.

vi. Model any investment expenses allocated to policy loans and include them either with policy loan cash flows or insurance expense cash flows.

VM-20 Policy Loan example
Policy Loan Rate equals Net Asset Earned Rate

Loan interest rate:	5%
Initial loan balance:	1,000
Additional loan end of year 2:	500

Interest paid in cash for 3 yrs, then interest is added to loan balance in years 4 and 5
Loan repaid at end of 5 years

	0	1	2	3	4	5
Loan balance	1,000.00	1,000.00	1,500.00	1,500.00	1,575.00	1,653.75
New loan			500.00			
Interest paid in cash		50.00	50.00	75.00		
Interest added to loan					75.00	78.75
Principal repayment						1,653.75

VM-20 Deterministic Reserve Calculation:

NAER	5%					
PV of benefits						
Initial loan balance	**1,000.00**					
PV of revenue						
Cash flows						
Policy Loan interet paid in cash		50.00	50.00	75.00	-	-
New loans		-	(500.00)	-	-	-
Principal repayments						1,653.75
Net revenue cash flow		50.00	(450.00)	75.00	-	1,653.75
PV of each net cash flow		47.62	(408.16)	64.79	-	1,295.76
PV of Revenue	**1,000.00**					
Impact on Deterministic Reserve (PV of benefits less PV of revenue)	-					

VM-20 Policy Loan example
Policy Loan Rate is greater than Net Asset Earned Rate

Loan interest rate:	6%
Initial loan balance:	1,000
Additional loan end of year 2:	500

Interest paid in cash for 3 yrs, then interest is added to loan balance in years 4 and 5
Loan repaid at end of 5 years

	0	1	2	3	4	5
Loan balance	1,000.00	1,000.00	1,500.00	1,500.00	1,590.00	1,685.40
New loan			500.00			
Interest paid in cash		60.00	60.00	90.00		
Interest added to loan					90.00	95.40
Principal repayment						1,685.40

VM-20 Deterministic Reserve Calculation:

NAER	5%					
PV of benefits						
Initial loan balance	**1,000.00**					
PV of revenue						
Cash flows						
Policy Loan interet paid in cash		60.00	60.00	90.00	-	-
New loans		-	(500.00)	-	-	-
Principal repayments						1,685.40
Net revenue cash flow		60.00	(440.00)	90.00	-	1,685.40
PV of each net cash flow		57.14	(399.09)	77.75	-	1,320.56
PV of Revenue	**1,056.35**					
Impact on Deterministic Reserve (PV of benefits less PV of revenue)	(56.35)					

Implement the 4% floor for policies issued after the VM operative date

Adopted by Life Actuarial (A) Task Force: 10/10/13

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life Actuarial Task Force
Amendment Proposal Form*

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

   John Bruins, American Council of Life Insurers

   Floor on maximum nonforfeiture interest rate

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:

   Valuation Manual adopted by Life Insurance and Annuities (A) August 17, 2012

   Section 4.A. of VM-02 Minimum Nonforfeiture Mortality and Interest

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.)

   VM-02 MINIMUM NONFORFEITURE MORTALITY AND INTEREST

   Section 4. Interest

   A. The nonforfeiture interest rate for any life insurance policy issued in a particular calendar year beginning on and after the operative date of the valuation manual shall be equal to one hundred and twenty-five percent (125%) of the calendar year statutory valuation interest rate defined for the Net Premium Reserve in the Valuation Manual for a life insurance policy with nonforfeiture values, whether or not such sections apply to such policy for valuation purposes, rounded to the nearer one quarter of one percent (1/4 of 1%), provided, however, that the nonforfeiture interest rate shall not be less than 4.00%.

   Guidance Note: For flexible premium universal life insurance policies as defined in Section3.D. of the Universal Life Insurance Model Regulation (NAIC Model 585), this is not intended to prevent an interest rate guarantee less than the nonforfeiture interest rate.

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

A floor is proposed to be added to the calculation of the nonforfeiture interest rate equal to 4.00% which is the annual effective rate used to determine the net single premium for purposes of the cash value accumulation test under Section 7702(b) of the Internal Revenue Code. The purpose of the floor is to assure that, in a low interest rate environment, traditional life insurance can continue to be issued in compliance with both state minimum nonforfeiture requirements and the maximum cash value requirements in Section 7702 of the Internal Revenue Code of 1986 (as amended). Policyholders of life insurance contracts that fail to comply with the requirements of IRC Section 7702 are subject to significant adverse federal income tax treatment, including current taxation of the gain on the contract.

Life insurance contracts use one of two tests to meet the requirements of IRC Section 7702 to qualify as life insurance for federal tax purposes. Traditional whole life uses the cash value accumulation test (CVAT) in Section 7702 to comply with this statute. Under CVAT, the maximum cash value is defined as the Net Single Premium (NSP) at the greater of an annual effective rate of 4% and the rate or rates guaranteed upon issuance of the contract. In addition, the contract must comply with CVAT by its terms for the life of the contract.

If the maximum state nonforfeiture interest rate were to fall below 4%, a traditional life insurance contract would not be able in most instances, by its terms, to comply with both state minimum nonforfeiture requirements and the maximum cash value requirements in Section 7702.

For example, if the maximum state nonforfeiture interest rate was 3.75%, a traditional whole life insurance contract would become paid up with the minimum state cash value determined by the NSP at 3.75%, while the maximum Section 7702 limit would be the NSP at 4%. The state minimum required cash value would be greater than the maximum Section 7702 cash value (NSP) and the contract could not comply with both federal and state laws.

Therefore, we recommend a floor for the maximum nonforfeiture interest rate in the Standard Nonforfeiture Law for policies issued before the operative date of the Valuation Manual such that the maximum nonforfeiture rate cannot be less than the cash value accumulation test rate. For policies issued on or after the effective date of the Valuation Manual, we are also recommending that the Valuation Manual contain such a floor. This retains the enhanced flexibility of the Valuation Manual.

This recommendation is not intended to prevent an interest rate guarantee less than the nonforfeiture interest rate for flexible premium universal life insurance policies.

Direct Iteration Method

Adopted by Life Actuarial (A) Task Force: 3/27/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

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:

   Requirements for Principle-based Reserves for Life Products, Draft dated 12/2/12, Section 4

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.)

   SEE Appendix A

4. State the reason for the proposed amendment:

   Summary of Proposal

   Under this amendment, a company would have the option to calculate the Deterministic Reserve ("DR") using an alternative method to the one already specified in VM-20. The alternative method theoretically results in equivalent reserves as those produced under the current VM-20 approach.

   The alternative method ("Direct Iteration Option") permits the calculation of the DR by finding directly the starting assets that fully liquidate the liabilities for a block of business over the DR projection horizon using the same cash flow model and assumptions required currently in VM-20. The statutory carrying value of those starting assets is held as the DR. This alternative mitigates certain issues associated with the current VM-20 approach while simplifying the calculation of the DR (including eliminating the need to calculate Net Asset Earned Rates ("NAERs")).

   Discussion of Direct Iteration Option

   Under VM-20, the DR is an aggregate reserve for a group of policies calculated as the actuarial present value of benefits, expenses and related amounts less the actuarial present value of premiums and related amounts. A single economic scenario is prescribed. In determining the actuarial present values, a path of discount rates must be derived from the cash flow model's projection of NAERs. Because this is an asset/liability modeling exercise, the NAERs depend upon:

   - Projected net investment earnings from the portfolio of starting assets;
   - The pattern of projected asset cash flows from the starting assets and subsequent reinvestment assets;
   - The pattern of net liability and expense cash flows; and
   - The projected net investment earnings from reinvestment assets.

VM-20 requires finding a starting asset portfolio that, when included in the cash flow model, results in a deterministic reserve amount that is within 2% of the statutory valuation of those starting assets. Iterative techniques are often used to find such a starting asset portfolio.

Equivalence

This proposal for permitting the Direct Iteration Option rests on the observation that the current VM-20 method and the proposed method should result in equivalent reserves. Table 1 portrays a simple example illustrating this. The example demonstrates that the calculation of the DR at issue ($76.06, in row E below) can be shown to just cover the periodic cash flows over the coverage period (10 years), resolving to $0.00 at the end of the coverage period (Asset roll forward row). *Although not specifically stated in VM-20, this equivalency is key to the definition of the DR*. The parameters that make the example simple are a level NAER, and annual cash flows assumed to occur precisely at the end of each period.

Table 1

Period	0	1	2	3	4	5	6	7	8	9	10
A) Net cash flows		-40	-20	-10	-5	-1	-1	-2	-1	-2	-1
B) NAER		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
C) Path of Discount Rates		0.9615	0.9246	0.8890	0.8548	0.8219	0.7903	0.7599	0.7307	0.7026	0.6756
D) -A * C		38.4615	18.4911	8.8900	4.2740	0.8219	0.7903	1.5198	0.7307	1.4052	0.6756
E) Sum (D) from (t) to 10	76.06	37.60	19.11	10.22	5.94	5.12	4.33	2.81	2.08	0.68	-
Asset roll forward	**$ 76.06**	**$ 39.10**	**$ 20.67**	**$ 11.49**	**$ 6.95**	**$ 6.23**	**$ 5.48**	**$ 3.70**	**$ 2.85**	**$ 0.96**	**$ (0.00)**

The Direct Iteration Option has strong similarities to the Canadian Asset-Liability Method ("CALM") for determining reserves. Under CALM, the reserve is the reported value of the starting assets whose cash flows, when considered with other modeled asset and liability cash flows, completely liquidate all modeled liabilities by the end of the projection horizon under conservative economic scenarios.

Reasons for Permitting the Direct Iteration Option

1. Equivalence – Both methods are theoretically equivalent and satisfy the goal of finding those starting assets that should run off the liabilities under the conservative assumptions desired for a DR. However, field testing found that the current VM-20 method may result in starting asset levels that are insufficient in maturing modeled liabilities or result in excess assets at the end of the projection period.

   As part of an ACLI study on the impact of VM-20,[1] companies evaluating the DR were asked to determine whether the VM-20 methodology provided sufficient modeled assets to satisfy model segment liabilities. Participants were asked to report evidence of the "ending book value of assets" from their Phase 1 DR calculation. Few, if any of these companies reported a near-zero ending asset value. Deviations tended to be greater for products with longer projection horizons and significant modeled cash flows in later durations. While companies did not analyze why this happened, it suggested that care be exercised when using the path of NAER-based discount rates to discount net cash flows.

2. Simplicity – From the perspective of setting up and running models, this direct approach may be considerably simpler for a company as there is no need to calculate NAERs, consider non-cash accounting items, discount the liability cash flows, and meet a 2% collar test.

3. Reduced Chance of Error - The determination of the NAER is particularly subject to errors, and *errors in the NAER can compound* as all liability cash flows are discounted by the product of all NAERs determined prior to the point of the liability cash flow. These intermediate steps typically

[1] http://publications.milliman.com/research/life-rr/pdfs/vm-20-impact-study.pdf, page 34.

add to the potential for error, and will likely be a source of concern in practice. (See Appendix B for a further discussion of the nature of NAER errors)

4. Cash Flows Only Considered – For the current VM-20 approach to work, the non-cash amortization/accretion of bond premiums/discounts must be included in the projection model (as well as PIMR recognition and amortization). This is not necessary in a direct approach where only real cash flows need to be considered. (Note that the Direct Iteration Method does include the unamortized bond premiums/discounts in the DR as it is the statutory carrying value of the assets that liquidate the obligations that is held as the DR.)

5. Proof of Reserve Adequacy – The direct calculation alternative method provides proof that the liabilities have been run off and that there is either a zero or slightly positive asset balance remaining at the end of the projection.

6. No Collar Test needed – Under the current VM-20 method, the statutory valuation of the final starting assets must be within 2% of the modeled deterministic reserve. The 2% collar allowance may itself introduce some error in the DR calculation. Under the alternative method, this collar test is unnecessary as the appropriate level of assets is directly iterated for.

Appendix A

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 using the method described in either subsection A or subsection B of this section.

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 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;

b. 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,

c. 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.

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 C 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.

B. Calculate the deterministic reserve as a - b, where

a = the aggregate annual statement value of those starting assets which, when projected along with all premium and investment income, result in the liquidation of all projected future benefits and expenses by the end of the projection horizon. Under this alternative, the following considerations apply:

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

2. The requirements for future benefits and premiums in Section 4.A apply as well to the calculation of the deterministic reserve under this subsection.

b = that portion of the PIMR amount allocated under Section 7.

C. Future net reinsurance aggregate cash flows shall be allocated as follows:

1. Future net reinsurance aggregate cash flows shall be allocated to each policy reinsured under a given reinsurance agreement in the same proportion as the ratio of each policy's present value of future net reinsurance discrete cash flows to total present value of future net reinsurance discrete cash flows under the reinsurance agreement.

2. Future net reinsurance aggregate cash flows allocated to a group of policies is equal to the sum of future net reinsurance aggregate cash flows allocated to each policy in the group.

Appendix B

Errors and approximations in calculation of the Net Asset Earned Rate (NAER)

The calculation of the NAER is complex. Approximations must be made, and errors due to simple mis-understanding have been common during field tests. Some of the common approximations and errors fall in these two categories:

1. **Assumed timing of cash flows during the month.** Many models provide only the total cash flow for the month, even while internally assuming different parts of the cash flow such as premiums, benefits and expenses occur at different times during the month. In order to calculate a monthly NAER, one must make an assumption regarding the timing of cash flows during the month if complete information is not available. The table below illustrates the different results that can be calculated simply due to different assumptions regarding the timing of cash flows during the month, or due to rounding the monthly NAER to a single basis point.

Assets at beginning of month		A	1000
Cash flow		C	-10
Investment income		I	5
Assets at end of month		B	995

Computed yield rate:		Monthly	Annualized
BOM cash flow	I/(A+C)	0.5051%	6.23%
MOM cash flow	I/(A+0.5C)	0.5025%	6.20%
EOM cash flow	I/A	0.5000%	6.17%

Rounding monthly yield to single basis point:		Monthly	Annualized
BOM cash flow	I/(A+C)	0.51%	6.29%
MOM cash flow	I/(A+0.5C)	0.50%	6.17%
EOM cash flow	I/A	0.50%	6.17%

The timing of large "chunky" cash flows (e.g., reinsurance transactions) may further exacerbate the drift when such transactions are significant.

2. **Miscalculation of NAER within a model.** The calculation of investment income for purposes of calculating the NAER includes many items that are typically calculated separately within a model. Since commercial software has not yet been adapted to provide verified calculation of the NAER, modelers have had to implement the calculation on their own. In some cases, an ad hoc implementation can accidentally leave out some items that should be included in investment income for purposes of calculating the NAER. Items that might be overlooked include the following:

   - Defaults

- Realized capital gains on sale of investments
- Unrealized capital gains included in ending asset values
- PIMR amortization
- Investment expenses
- Amortization of bond premium and discounts

AMERICAN ACADEMY *of* ACTUARIES

Direct Iteration vs Gross Premium Valuation (PV Cash Flows) for Deterministic Reserves

American Academy of Actuaries[1]
Life Financial Soundness/Risk Management Committee

Presented to the National Association of Insurance Commissioners' Life Actuarial Task Force

December 13, 2013

This exercise is intended to demonstrate an answer to the question: "Does the Direct Iteration approach for the deterministic reserve result in the same amount as the Gross Premium Valuation approach currently required by VM-20?"

The Direct Iteration approach defines the reserve to equal the amount of starting assets that produces an accumulated asset value of zero at the end of the projection period.

The Gross Premium Valuation approach (PV (Cash Flows) or PV(CF)) defines the reserve to equal the present value of future cash flows using net asset earned rates as the discount rates.

A modeling software platform from a vendor was used to perform the cash flow projections, which are summarized in the attached Excel spreadsheet. What follows is an explanation of what is contained in each tab of the spreadsheet.

A. PV(Cash flows) tab

Cash flows emanating from an inforce model of 206 contracts (these happen to be deferred annuity contracts, but the underlying source of cash flows does not matter to the demonstration).

a. Cash Income = Premium
b. Cash Outgo = Surrender payments; Death claim payments; Expenses
c. Rate for Discount: An average cycle net investment earnings rate, which is determined by the modeling system and extracted for use in the spreadsheet. The modeling system follows the general formula $(1+A/B)^{12}-1$ when determining this variable where:

A includes monthly interest on cash, monthly interest income (coupons, etc), monthly change in accrued investment income, monthly accrual of discount or premium, monthly default costs, monthly investment expense, and

[1] The American Academy of Actuaries is a 17,500-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.

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B is the invested asset earnings base, or (Cash + Invested Assets) for the month. Note that the pre-tax IMR (PIMR) is omitted for simplicity.

Items a, b, and c above are used to develop the PV(CashFlows) as follows:

- Cash Income, or Premium, is discounted using a monthly discount rate, from the *beginning* of the month.
- Surrender payments are discounted using a monthly discount rate, from the *end* of the month
- Death claim payments and expenses are discounted using a monthly discount rate, from the *middle* of the month.

At the 823rd month, all fractional portions of the policies have expired. The end result of discounting the monthly cash flows over 823 months is $1,558,929.40. To be clear, then starting assets used for this projection are within the 2% collar required by VM-20.

B. Direct Iteration Tab

Balance sheet showing total assets, total liabilities and free surplus from the projection whereby starting assets (Assets(0) in chart) are equal to the baseline amount of $1,550,205. Two other trials were also performed, each $1 apart from the baseline. The total assets at month 823, when liabilities are extinguished, is positive and near zero with a starting asset value of $1,550,205. The table below shows the sensitivity in month t=823 to a +$1 and -$1 variance in starting assets. The variance between the direct iteration starting asset number of $1,550,205 and the PV(CF) number of $1,558,929.40 is $8,724 or 0.56% of the starting asset amount.

			Assets(month)			
	Assets(0)	PV(CF)	t=400	t=600	t=800	t=823
i	1,550,204	1,558,929.50	82,313	1,943	1.79	1.74
Ii	1,550,205	1,558,929.40	82,316	1,948	12.50	13.21
iii	1,550,206	1,558,929.32	82,319	1,954	23.08	24.58

C. Graph Tab

Assets by projection month. This tab was included simply to show that the asset values remain positive throughout the course of the projection.

Characteristics that allow the Direct Iteration result to converge to the PV(CF) result:

1. Increased granularity in the determination of the discount rate. A monthly projection cycle, rather than annual for example. This provides an "average cycle net investment earnings rate" that is as consistent as possible with the investment earnings rate implied by the cash account and invested asset cash flows.

2. Increased granularity in the cash flows used. Requiring the system to provide monthly cash flows allows for recognition of a more granular view to the timing of these monthly

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cash flows. Cash flows must be discounted using a discount rate that is consistent with their monthly timing in the model (begin, end, spread). So, if the modeling system treats expenses as being spread evenly over the month, then using a discount factor from the middle of the month increases the likelihood of convergence.

3. Keeping a positive asset amount throughout the projection.

4. This example does not consider policy loans or PIMR, but had these been included, convergence may have been more adversely impacted.

Direct Iteration vs PV (Cash Flows) on ANNUAL CYCLE BASIS

We also tested the convergence of the two approaches using an annual projection cycle. The only change made to the model setup is to move from a monthly projection cycle (whereby investments/disinvestments are performed monthly) to an annual projection cycle. The only change made to the *workbook* setup (i.e., the PV(CF) calculation) is to make the discount factors reflect the annual reporting cycle and to discount premium from mid-year, since the mode of payment is monthly. Detailed results from this projection are not attached, but are available.

The monthly chart is restated below, followed by the annual results, with discussion.

MONTHLY

			Assets(month)			
	Assets(0)	PV(CF)	t=400	t=600	t=800	t=823
i	1,550,204	1,558,929.50	82,313	1,943	1.79	1.74
ii	1,550,205	1,558,929.40	82,316	1,948	12.50	13.21
iii	1,550,206	1,558,929.32	82,319	1,954	23.08	24.58

ANNUAL

			Assets(year)			
	Assets(0)	PV(CF)	t=33	t=50	t=67	t=69
i	1,550,204	1,557,897.43	-46,954	-64,817	-65,099	-65,098.77
ii	1,550,205	1,557,898.12	-46,951	-64,814	-65,095	-65,095.48
iii	1,550,206	1,557,898.80	-46,948	-64,811	-65,092	-65,092.24
C	1,567,279	1,558,519.11	2,581	42	1	1

In the Annual table, rows i, ii, and iii are simply the starting asset amounts used in the monthly work, with corresponding PV(CF) results and projected asset values. The row labeled "C" is the convergence iteration on the annual cycle basis (*consider the row "C" as the parallel to the Monthly table, row i, both having ending asset values near zero*). The primary take-away from this particular model is that, when using granular discounting mechanics, as represented by the *monthly* cycle, the variance between Direct Iteration approach and PV(CF) approach is essentially the same as the parallel demonstration using an

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annual cycle. In other words, variance in the results of the two approaches under consideration is very similar as long as the same care is taken in reflecting the appropriate cash flow timing in the discounting process within the PV(CF) approach. Numerically, this observation is summarized below.

Projection cycle	Direct Iteration Starting Assets	PV(CF)	Difference	Difference as % of Direct Iteration Starting Assets
Monthly (row i)	$ 1,550,204	$ 1,558,929.50	$ 8,725.50	0.5629%
Annual (row C)	$ 1,567,279	$ 1,558,519.11	$ 8,759.89	0.5589%

Conclusion

This exercise is intended to demonstrate an answer to the question: "Does Direct Iteration approach result in the same amount as the Gross Premium Valuation approach currently required by VM-20?" Our conclusion is yes, assuming the PV(CF) is performed with a robust level of granularity, particularly in regard to the timing of cash flows during the cycle of the projection. This particular demonstration shows this to be true regardless of the projection interval used in modeling the cash flows.

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Exempt Industrial Life Insurance from VM-20

Adopted by Life Actuarial (A) Task Force: 3/27/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life Actuarial (A) Task Force
Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.
   Mike Boerner, Texas Department of Insurance
   Purpose of this amendment is to exempt industrial life insurance from the requirements of VM-20.

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:
   Valuation Manual: VM-0, II. Reserve Requirements, Life Insurance Products, paragraph 2.

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.)
   See excerpt copied below with edit.

4. State the reason for the proposed amendment? (You may do this through an attachment.)
   Exemption from VM-20 for industrial life insurance is believed appropriate similar to current exemptions from VM-20 for preneed and credit life insurance.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

II. RESERVE REQUIREMENTS
This section provides the minimum reserve requirements by type of product. All reserve requirements provided by this section relate to business issued on or after the operative date of the Valuation Manual. All reserves must be developed in a manner consistent with the requirements and concepts stated in the Overview of Reserve Concepts in Section I of the Valuation Manual.

LIFE INSURANCE PRODUCTS
1. This subsection establishes reserve requirements for all contracts issued on and after the operative date of the Valuation Manual that are classified as life contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50), with the exception of annuity contracts and credit life contracts. Minimum reserve requirements for annuity contracts and credit life contracts are provided in other subsections of the Valuation Manual.

2. Minimum reserve requirements for variable and non-variable individual life contracts, excluding preneed life contracts, industrial life contracts[1], and credit life contracts, are provided by VM-20 except for election of the transition period in paragraph 3 of this subsection.

Minimum reserve requirements of VM-20 are considered PBR requirements for purposes of the Valuation Manual and VM-31 unless VM-20 or other requirements apply only the net premium reserve method or applicable requirements in VM-A and VM-C.

Minimum reserve requirements for life contracts not subject to VM-20 are those pursuant to applicable requirements in VM-A and VM-C.

[1] An industrial life contract is a life insurance contract that is required to comply with the minimum reserve standard for industrial life insurance policies as provided by the Valuation Manual and which meet the requirements of the state where issued for industrial life insurance policies.

Net Premium Reserve Clarification

Adopted by Life Actuarial (A) Task Force: 5/22/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   John Bruins, ACLI – clarify NPR

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:

   Valuation Manual adopted 12/2/12 -- VM-20 – Section 3

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.)

Section 3. Net Premium Reserve

A. Applicability

1. The net premium reserve for each term policy, universal life insurance with secondary guarantee policy (definitions of products to be included need to be determined) must be determined pursuant to Section 3.

2. Except for policies subject to Section 3.A.1 the net premium reserve shall be determined pursuant to applicable requirements in VM-A and VM-C for the basic reserve.

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

   All products subject to this section VM-20 are either tested for cash flow risk and premium levels, or are required to compute the deterministic and stochastic reserves. The deterministic reserve is a more sophisticated analysis than the deficiency reserve calculation, and that calculation would be a redundant requirement that would add no value.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Treatment of Due Premiums

Adopted by Life Actuarial (A) Task Force: 6/5/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life and Health Actuarial 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.

   Treatment of Due Premiums in VM-20 reserve calculation

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: Requirements for Principle-based Reserves for Life Products, Draft dated 12/2/2012, Sections 2, 6A and 7B.

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.)

   See attached document.

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

   The current draft of VM-20 is silent on the treatment of due premiums. This proposal treats due premiums similar to deferred premiums when determining the adjustment for DPA in section 2, and requires that due premiums be included in the expected future cash flows when calculating the Deterministic Reserve (DR) and Stochastic Reserve (SR). Since this approach reduces the resulting DR and SR amounts compared to the reserve amounts that would be calculated had there been no due premiums in the cash flows, it is appropriate to include due premiums along with deferred premiums when making the comparison of the DR and SR to the NPR.

   Please note the following when reviewing this proposal:

   - The total assets of the company do not change when due premiums arise from non-payment of premiums. Rather than getting cash, the company sets up a due premium asset.
   - Since the due premiums are expected to be received in cash after the valuation date, the DR and SR will be reduced compared to what the DR and SR would be without any due premiums. This is because only cash premiums are treated as revenue in the DR and SR calculation (i.e., the change in due premiums is not treated as revenue in the DR and SR calculation).
   - The combination of the first two bullet points produce a net increase in surplus when due premiums arise. But there should be a neutral impact on surplus whether the premium is paid the day before the valuation date or the day after the valuation date. This is why this proposal is needed, since it adds the due premium to the DR and SR amount before the comparison is made to the NPR when determining the minimum reserve.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Section 2. Minimum Reserve

A. All policies subject to these requirements shall be included in one of the groups defined by paragraphs 1, 2 or 3. The company may elect to exclude one or more groups of policies from the stochastic reserve calculation and the deterministic reserve calculation if the exclusion tests determined pursuant to section 6 are passed. The minimum reserve equals the sum of:

1. For the group of policies that pass both the stochastic exclusion and the deterministic exclusion test: the aggregate net premium reserve for those policies.

2. For the group of policies that pass the stochastic exclusion test but do not pass the deterministic exclusion test: the aggregate net premium reserve plus the excess, if any, of the deterministic reserve determined pursuant to Section 4 over the quantity (A-B) where A = the aggregate net premium reserve for those policies, ~~reduced by~~ and B = any ~~deferred premium asset~~due and deferred premium asset held on account of those policies.

3. For the group of policies that fail the stochastic exclusion test, and for the group of policies not subject to the exclusion tests: the aggregate net premium reserve plus the excess, if any, of the greater of the deterministic reserve determined pursuant to Section 4 and the stochastic reserve determined pursuant to Section 5 over the quantity (A-B) where A = the aggregate net premium reserve for those policies, ~~reduced by~~ and B = any ~~deferred premium asset~~due and deferred premium asset held on account of those policies.

Section 6. Stochastic and Deterministic Exclusion Tests

A. Stochastic Exclusion Test

3. Stochastic Exclusion Demonstration Test

b. The company may use one of the following or another method acceptable to the commissioner to demonstrate compliance with subsection 6.A.3.a:

i. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the stochastic reserve calculated on a standalone basis, where:
A = ~~–~~the deterministic reserve, and
B = the net premium reserve~~,~~ less any associated ~~deferred premium asset~~due and deferred premium asset.~~, is greater than the stochastic reserve calculated on a standalone basis.~~

ii. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the scenario reserve that results from each of a sufficient number of adverse deterministic scenarios, where:

A = the deterministic reserve, and

B = the net premium reserve~~,~~ less any associated ~~deferred premium asset~~due and deferred premium asset. ~~, is greater than the scenario reserve that results from each of a sufficient number of adverse deterministic scenarios.~~

iii. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the stochastic reserve calculated on a standalone basis, but using a representative sample of policies in the stochastic reserve calculations, where:

A= the deterministic reserve, and

B= ~~the~~ net premium reserve~~,~~ less any associated ~~deferred premium asset~~due and deferred premium asset.~~, is greater~~

~~than the stochastic reserve calculated on a standalone basis, but using a representative sample of policies in the stochastic reserve calculations.~~

iv. Demonstrate that any risk characteristics that would otherwise cause the stochastic reserve calculated on a standalone basis to exceed greater of the deterministic reserve and the net premium reserve, less any associated ~~deferred premium asset~~due and deferred premium asset, are not present or have been substantially eliminated through actions such as hedging, investment strategy, reinsurance, or passing the risk on to the policyholder by contract provision.

Section 7. Cash Flow Models

B. General Description of Cash Flow Projections

1. For the deterministic reserve and for each scenario for the stochastic reserve, the company shall project cash flows ignoring federal income taxes and reflecting the dynamics of the expected cash flows for the entire model segment. The company shall reflect the effect of all material product features, both guaranteed and non-guaranteed. The company shall project cash flows including the following:

a. Revenues received by the company including gross premiums received from the policyholder (including any due premiums as of the projected start date).

Guidance Note: to be consistent with quantity B defined in Section 2.A.2 and 3, and quantity B defined in Section 6.A.3.b., all due premiums as of the projection start date are assumed to be collected after the projection start date, but the company needs to determine an assumption as to the timing of when the due premiums will be received.

Governance Process for Updating the Valuation Manual

Adopted by Life Actuarial (A) Task Force: 6/5/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

I. INTRODUCTION

AUTHORITY AND APPLICABILITY

The Valuation Manual sets forth the minimum reserve and related requirements for jurisdictions where the Standard Valuation Law, as amended by the NAIC in 2009, or legislation including substantially similar terms and provisions has been enacted by jurisdictions, and this Valuation Manual (VM) is operative. The NAIC Model Standard Valuation Law ("Standard Valuation Law" or "SVL") is provided in VM-05 of this Valuation Manual. The reserve requirements in the Valuation Manual satisfy the minimum valuation requirements of the Standard Valuation Law.

Requirements in the Valuation Manual are applicable to life insurance contracts, accident and health insurance contracts and deposit-type contracts as provided in the Valuation Manual. These contracts include the meaning provided by Statutory Statement of Accounting Principle (SSAP) 50 as found in the NAIC *Accounting Practices and Procedures Manual* (APPM). Annuity contracts are therefore included within the term life insurance contracts unless specifically indicated otherwise in this Valuation Manual.

Minimum reserve requirements are provided in this Valuation Manual for contracts issued on or after the Valuation Manual operative date of XXXXX Other requirements are applicable as provided pursuant to the SVL and this Valuation Manual.

BACKGROUND

As insurance products have increased in their complexity, and as companies have developed new and innovative product designs that change their risk profile, the need to develop new valuation methodologies or revisions to existing requirements to address these changes has led to the development of the Valuation Manual. In addition, the Valuation Manual addresses the need to develop a valuation standard that enhances uniformity among the principle-based valuation requirements across states and insurance departments. Finally, the Valuation Manual defines a process to facilitate future changes in valuation requirements on a more uniform, timely and efficient basis.

The goals of the National Association of Insurance Commissioners (NAIC) in developing the Valuation Manual are:

1. To consolidate into one document the minimum reserve requirements for life insurance contracts, accident and health insurance contracts, and deposit-type contracts pursuant to the SVL, including those products subject to principle-based valuation requirements and those not subject to principle-based valuation requirements.

2. To promote uniformity among states' valuation requirements.

3. To provide for an efficient, consistent and timely process to update valuation requirements as the need arises.

4. To mandate and facilitate the specific reporting requirements of experience data.

5. To enhance industry compliance with the 2009 SVL and subsequent revisions,as adopted in various states.

DESCRIPTION OF VALUATION MANUAL

The Valuation Manual contains five sections which provide requirements covered in Authority and Applicability above, and which discuss principles and concepts underlying these requirements.

1. Section I is an introductory section that includes the general concepts underlying the reserve requirements in the Valuation Manual.

2. Section II summarizes the minimum reserve requirements which apply to a product or type of product, including which products or categories of products are subject to principle-based valuation requirements and documentation. As minimum reserve requirements are developed for various products or categories of products, those requirements will be incorporated into this section. The applicability of the minimum reserve requirements to particular products will be clarified in the appropriate subsection. For example, the minimum reserve requirements that apply to a life insurance product will be identified in the subsection addressing life insurance reserve requirements.

3. Section III sets forth the requirements for the actuarial opinion and memorandum and the principle-based report.

4. Section IV sets forth the experience reporting requirements.

5. Section V contains Valuation Manual minimum standards. These standards contain the specific requirements that are referenced in Sections II – IV.

OPERATIVE DATE OF VALUATION MANUAL

The requirements in the Valuation Manual become operative pursuant to Section 11 of the SVL.

PBR REVIEW AND UPDATING PROCESS

A well-conceived and designed Principle-Based Reserve (PBR) Review and Updating Process is needed to ensure ongoing evaluation of the effectiveness of the PBR methodology, including prescribed assumptions defined in this Manual. This process will involve and provide ongoing feedback to regulators and interested parties, for the purpose of updating, improving, enhancing and modifying the PBR reserve requirements. These changes are necessary due to, for example, making adjustments as appropriate to margins for conservatism, future improvements in cash flow modeling techniques, future development of new policy benefits and guarantees, future changes in assumptions due to emerging experience, improved methods to assess risk, etc.

A key element of the PBR Review and Updating Process is to provide support for state insurance regulators regarding the necessary expertise, resources, data and tools to effectively review PBR models and reporting required in the Valuation Manual for products subject to PBR requirements.

Goals for the PBR Review and Updating Process include achieving consistency in regulatory requirements among states and assessing and making changes as appropriate.

PROCESS FOR UPDATING VALUATION MANUAL

~~*LATF*~~ *TASK FORCE PROCEDURES*

The NAIC is responsible for the process of updating the Valuation Manual. The Life Actuarial (A) Task Force (LATF) is primarily charged with maintenance of the Valuation Manual for adoption by the NAIC Plenary. LATF will coordinate with the Health Actuarial (B) Task Force (HATF), the Statutory Accounting Principles (E) Working Group (SAPWG), and other NAIC groups as necessary when considering changes. HATF will be primarily charged with developing and maintaining the health insurance sections of the Valuation Manual, with approval by the Health Insurance and Managed Care (B) Committee. However all changes to the Valuation Manual, including changes with respect to health insurance, must also be reviewed by LATF as gatekeeper under this process. As provided under Section 11C of the Standard Valuation Law (Model #820), any change to the Valuation Manual ultimately requires adoption by the NAIC by an affirmative vote representing (a) at least three-fourths (3/4) of the members of the NAIC voting, but not less than a majority of the total membership, and (b) members of the NAIC representing jurisdictions totaling greater than 75% of the relevant direct premiums written.

Guidance Note: To maximize the efficiency of the NAIC process and to promote consistency among amendments to the Valuation Manual, it was determined a single gatekeeper would work best. LATF was chosen as they were most directly involved in the Valuation Manual's development. LATF's review of HATF amendments would not focus on health related content.

Information and issues with respect to amendment of the Valuation Manual can be presented to the LATF/HATF in a variety of ways. Issues can be recommended or forwarded from other NAIC working groups or task forces, or from interested parties. In order for an issue or proposed change to the Valuation Manual to be placed on a Pending List, the recommending party shall submit an amendment proposal form~~, in conformance with and based on an announced timeframe.~~ An amendment form should be submitted 20 days prior to the next scheduled LATF/HATF meeting to be placed on the agenda for that meeting.

~~NAIC staff will update the Pending List before each NAIC national meeting. If the LATF does not wish to address the issue or rejects the position presented, then the item is moved to the Rejected List. Should the LATF choose to address an issue, it is moved to the Active List.~~LATF/HATF can move an item on the Pending List to either the Rejected List or to the Active List. Any disposition of items will occur in an open meeting. Items moved to the Active List will be categorized as Substantive, Non-Substantive, or an Update to a Table.

~~The LATF will utilize the NAIC website for exposure of any items. The Rejected List identifies all the items that were proposed to the LATF and rejected or deemed not applicable. The Active List identifies items that are in the process of completion. The Disposition List identifies the conclusions of the LATF. (Note: This process for updating the Valuation Manual addresses the procedure for presenting items for consideration by LATF with respect to amending the Valuation Manual. The timing for consideration of these items is left to the discretion of the LATF. For example, an item can move from the Pending List to the Disposition List in one, two or more national meetings.~~

SUBSTANTIVE ITEMS

~~Upon adoption by the LATF, all proposed changes will be exposed for public comment for a period commensurate with the length of the draft and the complexities of the issue. After a hearing (public meeting or conference call with opportunity to review interested parties comments), adoption of changes made by LATF and any further amendments will be made by a simple majority. All changes to the Valuation Manual must be on the agenda for at least one hearing, before presentation to LATF for consideration. However, in cases where proposed guidance has already been subjected to substantial due process (e.g., public comment periods or public hearings), LATF may shorten comment periods or they may be eliminated or the hearings may be eliminated.~~ Substantive changes to the Valuation Manual are proposed amendments to the Valuation Manual that would change or alter the meaning, application or interpretation of a provision. All changes to the Valuation Manual will be considered substantive, unless specifically identified as either a Non-Substantive Item or an Update to a Table by simple majority vote of LATF/HATF. Any item placed on the Active List as Substantive will be exposed by LATF/HATF for comment period commensurate with the length of the draft and the complexities of the issue, but for no less than 21 days. The comment period will be deemed to have begun when the draft has been ~~publicly~~ placed on the appropriate public NAIC webpage. LATF/HATF will hold at least one open meeting (in person or by conference call) to consider comments before holding a final vote on any Substantive Items. Subsequent exposures of Substantive Items will be for a minimum of 7 days. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated on any Substantive Items. Adoption of all changes at LATF/HATF will be by simple majority.

NON-SUBSTANTIVE ITEMS

Non-substantive changes to the Valuation Manual are changes that primarily pertain to technical revisions such as changes to titles, words, definitions, procedures, grammar corrections, reference errors, making individual sections of the Valuation Manual consistent with each other, etc. that are necessary in order to clarify an intent that has already been thoroughly documented either in the NAIC Proceedings, the Valuation Manual, or other NAIC guidance. ~~In order to be considered to be a Non-Substantive Item,~~ LATF/HATF must adopt the change with an affirmative vote of a simple majority of the LATF/HATF membership voting. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated on any Non-Substantive Items. Non-Substantive Items will be exposed for comment with a period of time commensurate with the complexity of the change.

UPDATES TO DESIGNATED TABLES

Certain designated Tables contained in the Valuation Manual are intended to be updated on a periodic basis, as they provide current reference data integral to annual calculations (e.g., those tables located in Appendix 2 of VM-20, which have a process for annual and quarterly updates specifically prescribed in the Valuation Manual). Updates to these tables in accordance with this process are not considered to be an amendment of the Valuation Manual itself, and are not subject to the requirements of Section 11C of Model #820 for the amendment of the Valuation Manual. Updates to these designated tables will be exposed by LATF/HATF for a minimum 14 day comment period. If no comments are received, LATF/HATF will vote on the item at the next regularly scheduled meeting. If comments are received, LATF/HATF will hold at least one open meeting (in person or by conference call) to consider comments. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated ~~to~~on any Update to Designated Tables.

WAIVER OF ~~LATF~~TASK FORCE PROCEDURE

If LATF/HATF determines that a waiver of the above procedures is necessary to expeditiously consider modification of the Valuation Manual in order to advance a valid regulatory purpose, it may, upon a three-fourths (3/4) majority vote of its members present and voting, modify the above-procedures. However, in no event will Substantive Items be considered for adoption without a 14 day comment period.~~move to recommend adoption of changes or modifications to the appropriate parent committee. The report of LATF shall fully explain the necessity of expeditious action and attempt to summarize in an~~

~~objective manner the positions of the various interested parties. The NAIC Plenary will vote in accordance with the normal procedures provided under Section 11C of Model #820.~~

COORDINATION WITH SAPWG

Proposed changes to the Valuation Manual must be consistent with existing model laws, including the Standard Valuation Law, ~~or with projects which have received Executive (EX) Committee approval to develop new model laws~~ and, to the extent determinable, with models in development. To the extent that proposed changes to the Valuation Manual could have an impact on accounting and reporting guidance and other requirements as referenced by the *Accounting Practices and Procedures Manual*, proposed changes must be reviewed by ~~the Statutory Accounting Principles (E) Working Group (~~SAPWG~~)~~ for consistency with the *Accounting Practices and Procedures Manual*, including as to implementation dates. LATF or its staff support will prepare a summary recommendation that will include as appropriate an analysis of the impact of proposed changes.

~~An objective is that the *Accounting Practices and Procedures Manual* will reference appropriate Valuation Manual requirements with the same implementation date as the Valuation Manual.~~ If SAPWG reaches the conclusion that the proposed changes to the Valuation Manual are inconsistent with the authoritative guidance in the *Accounting Practices and Procedures Manual*, LATF will work with SAPWG to resolve such inconsistencies.

~~When both the SAPWG and the LATF conclude that the proposed Valuation Manual changes are in conformance with these guidelines and they are adopted by LATF, the Valuation Manual changes will be forwarded to the appropriate parent committees or task forces prior to consideration of NAIC adoption by the Executive (EX) Committee and Plenary.~~

~~The following Jan. 1 will generally be the effective date unless otherwise specified in the changes adopted.~~

COMMITTEE PROCEDURES

The Life Insurance and Annuities (A) Committee (A Committee) or the Health Insurance and Managed Care (B) Committee (B Committee) will consider any Valuation Manual amendments (whether Substantive or Non-Substantive) as a separate agenda item at any regularly scheduled meeting. Amendments to the life and annuity sections of the Valuation Manual must first be approved by LATF, and LATF, as gatekkeper under this process, shall then review and prepare for consideration by the A Committee any changes to the life and annuity sections of the Valuation ~~Manual~~Manual. Amendments to the health insurance sections of the Valuation Manual must first be approved by HATF, and ~~the Health Insurance and Managed Care (B) Committee.~~ LATF, as gatekeeper under this process, shall then review and prepare for consideration by ~~A~~the B Committee any changes to the health insurance sections of the Valuation Manual. No additional exposure period is required for review by LATF. Updates to Tables will be reported to the appropriate Committee, but will not require a separate vote. In order to allow for additional input, the A and B Committees generally will not vote on adoption of any Substantive Items unless 14 days have elapsed since adoption by LATF. Adoption of all changes by the A and B Committees will be by simple majority.

EXECUTIVE/PLENARY PROCEDURES

The NAIC Executive/Plenary will generally consider Valuation Manual amendments at the National Meeting following adoption by the Committee. In order to allow sufficient time to implement Substantive Items, final action by Executive/Plenary on Substantive Items will generally be taken at the Summer National Meeting. The voting requirements for adoption at Executive/Plenary are as set out in Section 11C of Model #820. Unless otherwise specified, all Valuation Manual amendments shall be effective January 1 following adoption by the NAIC.

OVERVIEW OF RESERVE CONCEPTS

Reserve requirements prescribed in the Valuation Manual are intended to support a statutory objective of conservative valuation to provide protection to policyholders and promote solvency of companies against adverse fluctuations in financial condition or operating results pursuant to requirements of the SVL.

A principle-based valuation is a reserve valuation that uses one or more methods or one or more assumptions determined by the insurer pursuant to requirements of the SVL and the Valuation Manual. This is in contrast to valuation approaches that use only prescribed assumptions and methods. Although a reserve valuation may involve a method or assumption determined by the insurer, such valuation is a principle-based valuation only as specified in the Valuation Manual for a product or category of products.

A principle-based reserve valuation must only reflect risks that are:

1. Associated with the policies or contracts being valued, or their supporting assets; and
2. Determined to be capable of materially affecting the reserve.

Risks not to be included in reserves are those of a general business nature, those that are not associated with the policies or contracts being valued, or those that are best viewed from the company perspective as opposed to the policy or contract perspective. These risks may involve the need for a liability separate from the reserve, or may be provided for in capital and surplus.

Since no list can be comprehensive and applicable to all types of products, this section of the Valuation Manual provides examples of the general approach to the determination of the meaning of "associated with the policies or contracts" while recognizing that each relevant section of the Valuation Manual will deal with this issue from the perspective of the products subject to that section. Examples of risks to be included in a principle-based valuation include risks associated with policyholder behavior (such as lapse and utilization risk), mortality risk, interest rate risk, asset default risk, separate account fund performance, and the risk related to the performance of indices for contractual guarantees.

CORPORATE GOVERNANCE REQUIREMENTS FOR PRINCIPLE-BASED RESERVES

The requirements found in VM-Appendix G (VM-G) provide corporate governance requirements applicable to products subject to PBR as specified in this Valuation Manual. VM-G applies to products issued prior to the operative date of the Valuation Manual that are subject to Actuarial Guideline XLIII in VM-00.

Appendix C in addition to those products subject to VM-21 issued on or after the operative date of Valuation Manual.

II. RESERVE REQUIREMENTS

This section provides the minimum reserve requirements by type of product. All reserve requirements provided by this section relate to business issued on or after the operative date of the Valuation Manual. All reserves must be developed in a manner consistent with the requirements and concepts stated in the Overview of Reserve Concepts in Section I of the Valuation Manual.

LIFE INSURANCE PRODUCTS

1. This subsection establishes reserve requirements for all contracts issued on and after the operative date of the Valuation Manual that are classified as life contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50), with the exception of annuity contracts and credit life contracts. Minimum reserve requirements for annuity contracts and credit life contracts are provided in other subsections of the Valuation Manual.

2. Minimum reserve requirements for variable and non-variable individual life contracts, excluding preneed life contracts and credit life contracts, are provided by VM-20 except for election of the transition period in paragraph 3 of this subsection.

   Minimum reserve requirements of VM-20 are considered PBR requirements for purposes of the Valuation Manual and VM-31 unless VM-20 or other requirements apply only the net premium reserve method or applicable requirements in VM-A and VM-C.

   Minimum reserve requirements for life contracts not subject to VM-20 are those pursuant to applicable requirements in VM-A and VM-C.

3. A company may elect to establish minimum reserves pursuant to applicable requirements in Appendix A (VM-A) and Appendix C (VM-C) for business otherwise subject to VM-20 requirements and issued during the first three years following the operative date of the Valuation Manual. If a company during the three years elects to apply VM-20 to a block of such business, then a company must continue to apply the requirements of VM-20 for future issues of this business.

ANNUITY PRODUCTS

1. This subsection establishes reserve requirements for all contracts classified as annuity contracts defined in the *Accounting Practices and Procedures Manual,* Statutory Statement of Accounting Principle 50 (SSAP50).

2. Minimum reserve requirements for variable annuity contracts and similar business, specified in VM-21, shall be those provided by VM-21. The minimum reserve requirements of VM-21 are considered PBR requirements for purposes of the Valuation Manual.

3. Minimum reserve requirements for fixed annuity contracts are those requirements as found in VM-A and VM-C as applicable.

DEPOSIT-TYPE CONTRACTS

1. This subsection establishes reserve requirements for all contracts classified as deposit-type contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50).

2. Minimum reserve requirements for deposit-type contracts are those requirements as found in VM-A and VM-C as applicable.

HEALTH INSURANCE PRODUCTS

1. This subsection establishes reserve requirements for all contracts classified as health contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50).

2. Minimum reserve requirements for accident and health insurance contracts, other than Credit Disability, are those requirements provided by VM-25 and VM-A and VM-C requirements, as applicable.

CREDIT LIFE AND DISABILITY PRODUCTS

1. This subsection establishes reserve requirements for all credit life, credit disability products and other credit-related products defined as follows:

2. "Credit life insurance" means insurance on a debtor or debtors, pursuant to or in connection with a specific loan or other credit transaction, to provide for satisfaction of a debt, in whole or in part, upon the death of an insured debtor.

   Credit life insurance does NOT include:

   a. Insurance written in connection with a credit transaction that is:

      i. Secured by a first mortgage or deed of trust; and

      ii. Made to finance the purchase of real property or the construction of a dwelling thereon, or to refinance a prior credit transaction made for such a purpose.

   b. Insurance sold as an isolated transaction on the part of the insurer and not related to an agreement or a plan for insuring debtors of the creditor.

   c. Insurance on accounts receivable.

3. "Credit disability insurance" means insurance on a debtor or debtors to or in connection with a specific loan or other credit transaction, to provide for lump sum or periodic payments on a specific loan or other credit transaction due to the disability of the insured debtor.

4. "Other Credit-Related Insurance" means insurance on a debtor or debtors, pursuant to or in connection with a specific loan or other credit transaction, including a real estate secured loan, to provide for satisfaction of a debt, in whole or in part, upon the death or disability of an insured debtor.

   a. Other Credit-Related insurance includes insurance written in connection with a credit transaction that is:

i. Secured by a first mortgage or deed of trust written as credit insurance, debtor group insurance or group mortgage insurance; and

ii. Made to finance the purchase of real property or the construction of a dwelling thereon, or to refinance a prior credit transaction made for such a purpose.

b. Other Credit-Related insurance DOES NOT include:

i. Insurance sold as an isolated transaction on the part of the insurer and not related to an agreement or a plan for insuring debtors of the creditor; and

ii. Insurance on accounts receivable.

5. Minimum reserve requirements for credit life, credit disability contracts and other credit-related insurance issued on or after the operative date of the Valuation Manual are provided in VM-26. For purposes of reserves for "other credit-related insurance" within VM-26, the terms "credit life insurance" and "credit disability insurance" shall include benefits provided under contracts defined herein as "other credit-related insurance."

RIDERS AND SUPPLEMENTAL BENEFITS

1. If a rider or supplemental benefit to one of the above types of products has a separately identified premium or charge, then the following apply:

a. For supplemental benefits, e.g., Disability Waiver of Premium, Accidental Death Benefits, Convertibility or Guaranteed Insurability, the reserves may be computed separate from the base contract following the reserves requirements for that benefit;

b. For term life insurance riders on persons other than the named insured[s] on the base policy, the reserve may be computed separate from the base policy following the reserve requirements for that benefit;

c. For term life insurance riders on the named insured[s] on the base policy, the reserve shall be valued as part of the base policy;

d. For riders that enhance or modify the terms of the base contract, e.g., a secondary guarantee rider or a cash value enhancement rider, the reserve shall be valued as part of the base policy; and

e. For any riders not addressed by paragraphs 1.b through 1.d above, the reserve shall be valued as part of the base policy.

2. If a rider or supplemental benefit does not have a separately identified premium or charge, all cash flows associated with the rider or supplemental benefit must be included in the calculation of the reserve for the base policy. For example, reserves for a universal life policy with an accelerated benefit for long-term care must include cash flows from the long-term care benefit in determining minimum reserves in compliance with VM-20. A separate reserve is not determined for the rider or supplemental benefit.

CLAIM RESERVES

Regardless of the requirement for use of the PBR approach to policy reserves, the claim reserves, including waiver of premium claims, are not subject to PBR requirements of the Valuation Manual.

III. ACTUARIAL OPINION AND REPORT REQUIREMENTS

Requirements regarding the annual actuarial opinion and memorandum pursuant to Section 3 of the NAIC Model Standard Valuation Law (VM-05) are provided in VM-30.

PBR Report requirements applicable to products or types of products subject to PBR as specified in the Valuation Manual are provided in VM-31.

IV. EXPERIENCE REPORTING REQUIREMENTS

Experience reporting requirements are provided in VM-50. The associated experience reporting formats and additional instructions are provided in VM-51.

V. VALUATION MANUAL MINIMUM STANDARDS

This section provides the specific minimum reserve standards as referenced by the preceding sections.

Mortality Credibility – Implementation Date

Adopted by Life Actuarial (A) Task Force: 10/9/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   John Bruins, ACLI, Revise effective date of the change to the mortality credibility calculation

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 9.C. Mortality Assumptions, Pages 52 – 60 of the Valuation Manual adopted 12/2/12 with non-substantive revisions through March 31, 2014

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.)

   See attached pages.

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

   In 2012, a revision to the valuation manual was adopted which defined revised standards for credibility determination and grading periods to industry studies. Since at the time the only immediate impact of the change would be to the AG-38 testing, and since PBR and a new mortality table were expected for 2015, the revised process was given an effective date of January 1, 2015. Neither of those is happening on 1/1/15, and the only impact continues to be on AG-38 8D testing. ACLI requests that the implementation date for these changes be revised to 1/1/2017 as the most likely date that PBR will be operative and that the new VBT will be adopted and in use.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

W:\National Meetings\2010\...\TF\LHA\

C. Mortality Assumptions

4. Credibility of Company Experience

a. For valuations prior to 1/1/2015~~5~~7, determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility that follows common actuarial practice as published in actuarial literature (for example but not limited to the Limited Fluctuation Method or Panjer method).

For valuations after 1/1/2015~~5~~7, determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility that follows common actuarial practice as published in actuarial literature (for example but not limited to the Limited Fluctuation Method or Panjer method) such that the minimum probability is at least 95% with an error margin of no more than 5%. ~~Determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility that follows common actuarial practice as published in actuarial literature (for example but not limited to the Limited Fluctuation Method or Panjer method).~~

b. Credibility may be determined at either the mortality segment level or at a more aggregate level if the mortality for the sub-classes (mortality segments) was determined using an aggregate level of mortality experience.

c. A single level of credibility shall be determined over the entire exposure period, rather than for each duration within the exposure period. This overall level of credibility will be used to:

i. Determine the prescribed margin for company experience mortality rates.

ii. Determine the grading period (shown in column (1) in table in Subsection 9.C.6.iii) for grading company experience mortality rates into the applicable industry basic table.

* * * * * * * * *

6. Process to Determine Prudent Estimate Assumptions.

a. If applicable industry basic tables are used in lieu of company experience, the prudent estimate assumptions for each mortality segment shall equal the respective mortality rates in the applicable industry basic tables as provided in subsection 9.C.3, plus the prescribed margin as provided in subsection 9.C.5.c.

b. If the company determines company experience mortality rates, the prudent estimate assumptions will be determined as follows:

i. For each mortality segment, use the company experience mortality rates (as defined in Subsection 9.C.2) for policy durations in which there exists sufficient company experience data (as defined below in paragraph ii), plus the prescribed margin as provided in subsection 9.C.5.b.

ii. The company shall determine the sufficient data period by identifying the last policy duration at which sufficient company experience data exists (using all the sources defined in Subsection 9.C.2.b). This period ends at the last policy duration which has 50 or more claims (i.e., no duration beyond this point has 50 claims or more). The sufficient data period may be determined at a more aggregate level than the mortality segment if the company based its mortality on aggregate experience and then used a methodology to subdivide the aggregate class into various sub-classes or mortality segments.

Guidance Note: The objective is to use last duration at which there are 50 or more claims; not the first duration in which there are less than 50 claims.

iii. Beginning in the policy duration at which sufficient company experience data no longer exists, use the guidelines in the applicable table below to linearly grade from the company experience mortality rates with margins to 100% of the applicable industry table with margins (the determination of the applicable industry table is described in Section 9.C.3). Grading must begin and end no later than the policy durations shown in the applicable table below, based on the level of credibility of the data as provided in subsection 9.C.4. For valuations on or after 1/1/201~~5~~7, if the credibility level is less than 20%, the company is not allowed to use its company experience and must use 100% of the applicable industry table.

A. The number of years for data to be considered sufficient is equal to the length of the sufficient data period (defined in paragraph ii. above) but no greater than the number of years in column (2).

B. Grading must begin no later than the number of years in column (3) after the duration when sufficient data no longer exists (as defined in paragraph (A) above).

C. Grading to 100% of the industry table must be completed no later than the number of years in column (4) after the duration when sufficient data no longer exists (as defined in paragraph (A) above).

Table effective for valuations December 31, ~~2014~~2016 and prior:

Credibility of company data over sufficient data period	Maximum # of years for data to be considered sufficient	Maximum # of years in which to begin grading after sufficient data no longer exists	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists)
(1)	(2)	(3)	(4)
10-19%	10	2	10
20-39%	20	4	15
40-59%	30	6	18
60-79%	40	8	20
80-100%	50	10	25

Table effective for valuations on and after January 1, ~~2015~~2017:

Credibility of company data over sufficient data period	Maximum # of years for data to be considered sufficient	Maximum # of years in which to begin grading after sufficient data no longer exists	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists)
(1)	(2)	(3)	(4)
20-39%	10	2	8
40-59%	20	4	17
60-79%	35	7	17
80-100%	50	10	25

Additional standards for valuations on and after January 1, ~~2015~~2017:

* The maximum # of years in which the assumption must grade to 100% of an applicable industry table shall be the lesser of (a) the appropriate number of years stated in the chart above or (b) the number of years of sufficient data + 15 times the credibility percentage applicable to column (1) in the chart above. This maximum # of years figure shall be rounded to the nearest whole number.

For example, if the number of years of sufficient data was 9 and the credibility percentage over the sufficient data period was 80%, (b) would equal 9 + 15 * (80%) = 21. The maximum # of years in which the assumption must grade to 100% of an applicable industry table (from the duration where sufficient data no longer exists) would therefore be 21.

Using Asset Adequacy Analysis for the Stochastic Exclusion Test and Increase SERT "pass" ratio to 6%

Adopted by Life Actuarial (A) Task Force: 11/14/14

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Life Actuarial (A) Task Force
Amendment Proposal Form*

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

   John Bruins, ACLI – simplify the stochastic exclusion test

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:

   Valuation Manual adopted 12/2/12, VM-20, Section 6.A.2

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 below.

4. State the reason for the proposed amendment:

   The principle of "less risk should require less work" is exemplified by the Stochastic Exclusion Ratio Test (SERT). When this test was first developed, it was clear in the discussion that a company would typically use its cash flow testing model to run the test of interest sensitivity for a block of business consisting of products with similar risk profiles. If a company had blocks of business that were not significantly interest sensitive, then the use of the cash flow testing model in this test would minimize the incremental work for the company in making that demonstration. However, the current VM-20 language does not make clear that the use of a cash flow testing model meeting the stated criteria would be acceptable for the SERT calculations. The Amendment Proposal Form provides clarifying language.

   During the initial development of the SERT, the Academy's Life Reserve Work Group had an analysis subgroup that calculated the SERT for a number of relatively simple product types. The 4.5% SERT test threshold was developed from this limited testing of simplified products. In the PBR Impact Study, a false negative was defined as a situation whether a product failed the SERT, but the minimum reserve was not the stochastic reserve. The PBR Impact Study showed, among other things, that the test value for the SERT tended to increase when multiple years of issue were included in the test. To eliminate most of the false negatives from the PBR Impact Study, a test statistic of 8.0% would be required. This Amendment Proposal Form replaces the current SERT 4.5% test statistic with 6.0%. Additional experience with PBR results could lead to further refinement of the level of this SERT test statistic over time, either up or down.

Appendix A

2. Stochastic Exclusion Ratio Test

a. In order to exclude a group of policies from the stochastic reserve requirements using the method allowed under Section 6.A.1.a, a company shall demonstrate that the ratio of (b-a)/c is less than ~~4.5~~6.0% where:

i. the a = the adjusted deterministic reserve described in subsection 6.A.2.b.i using the baseline economic scenario described in Appendix 1.

ii. b = the largest adjusted deterministic reserve described in subsection 6.A.2.b.i under any of the other 15 economic scenarios described in Appendix 1.

iii. c = an amount calculated from the baseline economic scenario described in Appendix 1 that represents the present value of benefits for the policies, adjusted for reinsurance by subtracting ceded benefits. For clarity, premium, ceded premium, expense, reinsurance expense allowance, modified coinsurance reserve adjustment and reinsurance experience refund cash flows shall not be considered "benefits," but items such as death benefits, surrender or withdrawal benefits and policyholder dividends shall be. For this purpose, the company shall use the benefits cash flows from the calculation of quantity "a," and calculate the present value of those cash flows using the same path of discount rates as used for "a."

Drafting Note: Empirical testing of the reinsurance adjustment to "iii" should encompass its impact in the case of YRT reinsurance as well as consistency of results among similar coinsurance, coinsurance with funds withheld, and modified coinsurance forms. A Guidance Note may prove necessary to address further judgment in the case of YRT.

b. In calculating the ratio in item a above, the company:

i. Shall calculate an adjusted deterministic reserve for the group of policies for each of the 16 scenarios that is equal to the deterministic reserve defined in Section 4.A, but with the following differences:

1. Using anticipated experience assumptions with no margins;
2. Using the interest rates and equity return assumptions specific to each scenario as defined in ii. below; and
3. Using net asset earned rates specific to each scenario to discount the cash flows.

(a) Shall use the most current available baseline economic scenario and the 15 other economic scenarios published by the NAIC. The methodology for creating these scenarios can be found in Appendix 1 of the 20.

(b) Shall use anticipated experience assumptions within each scenario that are dynamically adjusted as appropriate for consistency with each tested scenario.

(c) May not group together contract types with significantly different risk profiles for purposes of calculating this ratio.
(d) Mortality improvement beyond the projection start date may not be reflected in anticipated experience assumptions for the purpose of the calculating the stochastic exclusion ratio.

ii. Alternatively, a company may use gross premium reserves developed from the cash flows from the company's Asset Adequacy Analysis models in lieu of the deterministic reserve. In this case, the company may use the experience assumptions of the company's cash flow analysis as the anticipated experience assumptions. The interest rates and discount rates will be those defined in b.i.2. and b.i.3. above.

2. Stochastic Exclusion Ratio Test

a. In order to exclude a group of policies from the stochastic reserve requirements using the method allowed under Section 6.A.1.a, a company shall demonstrate that the ratio of (b-a)/c is less than 6.0% where:

i. a = the adjusted deterministic reserve described in subsection 6.A.2.b.i using the baseline economic scenario described in Appendix 1.

ii. b = the largest adjusted deterministic reserve described in subsection 6.A.2.b.i under any of the other 15 economic scenarios described in Appendix 1.

iii. c = an amount calculated from the baseline economic scenario described in Appendix 1 that represents the present value of benefits for the policies, adjusted for reinsurance by subtracting ceded benefits. For clarity, premium, ceded premium, expense, reinsurance expense allowance, modified coinsurance reserve adjustment and reinsurance experience refund cash flows shall not be considered "benefits," but items such as death benefits, surrender or withdrawal benefits and policyholder dividends shall be. For this purpose, the company shall use the benefits cash flows from the calculation of quantity "a," and calculate the present value of those cash flows using the same path of discount rates as used for "a."

Drafting Note: Empirical testing of the reinsurance adjustment to "iii" should encompass its impact in the case of YRT reinsurance as well as consistency of results among similar coinsurance, coinsurance with funds withheld, and modified coinsurance forms. A Guidance Note may prove necessary to address further judgment in the case of YRT.

b. In calculating the ratio in item a above, the company:

i. Shall calculate an adjusted deterministic reserve for the group of policies for each of the 16 scenarios that is equal to the deterministic reserve defined in Section 4.A, but with the following differences:

1. Using anticipated experience assumptions with no margins;

2. Using the interest rates and equity return assumptions specific to each scenario; and

3. Using net asset earned rates specific to each scenario to discount the cash flows.

(a) Shall use the most current available baseline economic scenario and the 15 other economic scenarios published by the NAIC. The methodology for creating these scenarios can be found in Appendix 1 of the 20.

(b) Shall use anticipated experience assumptions within each scenario that are dynamically adjusted as appropriate for consistency with each tested scenario.

(c) May not group together contract types with significantly different risk profiles for purposes of calculating this ratio.

(d) Mortality improvement beyond the projection start date may not be reflected in anticipated experience assumptions for the purpose of the calculating the stochastic exclusion ratio.

ii. Alternatively, a company may use gross premium reserves developed from the cash flows from the company's Asset Adequacy Analysis models in lieu of the deterministic reserve. In this case, the company may use the experience assumptions of the company's cash flow analysis as the anticipated experience assumptions. The interest rates and discount rates will be those defined in b.i.2. and b.i.3. above.

Small Company Exemption

Adopted by Life Actuarial (A) Task Force: 3/12/15

Adopted by Life Insurance and Annuities (A) Committee: 3/29/15

Modified 2/23/15

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   John Bruins, ACLI – Small Company exemption

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:

   Valuation Manual adopted 12/2/12, VM-20, Section 1 Definitions and Section 6,

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.)

   See next page.

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

   First is a definition of a subset of Universal Life with Secondary Guarantees labeled as "non-material secondary guarantee". This is to acknowledge a class of ULSG which is expected to operate primarily on the base guarantee of the contract, but which has a secondary guarantee to prevent policy termination during the earlier policy years . The definition includes limits on the duration and premium levels of the guarantee.

   The second part is an exemption designed to proportion the work to the size and risk of the company. VM-20 recognizes the principle of risk differentiation with the use of exclusion tests to allow less risky products to be exempted from the additional work of those reserve calculations. The tests in themselves can be a material amount of work to accomplish. Smaller companies traditionally do not issue the riskier types of products, yet without a company exemption would be subject to a material amount of work and documentation to demonstrate that absence of risk. This exemption is designed to assess the risk of the company instead of the product, thereby allowing PBR analysis to apply to the majority of life insurance business issued by the industry – at least 95% of ordinary life premium, and exempt smaller companies from that work who also meet requirements of capital well above regulatory minimums and absence of key products recognized to have a riskier profile. The reserve for an exempt company would use current reserve methods, but may require new mortality tables as adopted from time to time by the NAIC. This change would also give the commissioner the discretion to require application of PBR where it is deemed to be appropriate.

   .

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
2/24/15			
Notes: Adopted by LATF 3/12/15			

Section 1.C.

New definition:

The term 'non-material secondary guarantee' is a secondary guarantee (SG) which meets the following parameters at time of issue:

- The policy has only one secondary guarantee and that secondary guarantee is in the form of a required premium (specified annual or cumulative premium),
- The duration of the SG for each policy is no longer than 20 years from issue through issue age 60, grading down by 2/3 year for each higher issue age to age 82, thereafter 5 years.
- The present value of the required premium under the SG -must be at least as great as the present value of net premiums resulting from the appropriate Valuation Basic Table (VBT) over the maximum SG duration allowable under the contract (in aggregate and subject to above duration limit)
    - Present values use minimum allowable VBT rates (preferred tables are subject to existing qualification requirements) and the maximum valuation interest rate as defined in VM-20 Section 3.C.2.
    - The minimum premium consists of the annual required premium over the maximum SG duration

Note: VBT is the Valuation Basic Table, which is, the unloaded version of the applicable Commissioners Standard Ordinary (CSO) table.

*** * * * * * ***

Section 6. Stochastic and Deterministic Exclusion Tests

A. Companywide Exemption

1. A company meeting all of the following conditions may file a statement of exemption for the current calendar year with their domestic commissioner prior to July 1 of that year certifying that these conditions are met based on premiums and other values from the prior calendar year financial statements and that any ULSG business issued since the operative date of the Valuation Manual meets the definition for non-material secondary guarantee. The statement of exemption must also be included with the NAIC filing for the second quarter of that year. The Commissioner may reject such statement prior to September 1 and require the company to follow the requirements of VM-20 for the Ordinary Life policies. Otherwise, the minimum reserve requirements for its Ordinary Life policies are those pursuant to applicable requirements in VM-A and VM-C.

2. Conditions for exemption:

a. The company has less than $300 million of ordinary life premiums[1] and, if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums[1] of less than $600 million,

And

b. The company reported Total Adjusted Capital of at least 450% of the authorized control level RBC in the most recent RBC report, and the appointed actuary has provided an unqualified opinion on the reserves,

And

c. Any ULSG policies issued or assumed by the company with an issue date on or after the operative date of the valuation manual meet the definition of a non-material secondary guarantee ULSG product.

B. Stochastic Exclusion Test

[1] Premiums are measured as direct plus reinsurance assumed from an unaffiliated company from the Ordinary Life line of business reported in the prior calendar year L & H annual statement, Exhibit 1 Part 1.

Commercial Mortgage Risk Classifications

Adopted by Life Actuarial (A) Task Force: 5/7/15

Adopted by Life Insurance and Annuities (A) Committee: 6/4/15

Amendment Proposal Form*

(NAIC Research Division)

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

   John Bruins, ACLI, include Commercial Mortgages in the asset modeling

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, Appendix 1, Table K

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.)

   See following page

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

   The asset modeling of VM-20 is predicated on the use of a rating for the asset to drive the assumptions of default. Since 2013, the Life RBC instructions contain a method to assign commercial mortgages to risk classes. This amendment provides a basis for classifying these assets into one of the rating categories defined for modeling in VM-20.

   The chart below shows the relationship of the AVR and RBC factors for the commercial mortgage categories compared to the current 6 bond categories. Since this is a reserve calculation, the primary focus was on the AVR factors.

   The following chart shows the NAIC bond categories and the NAIC commercial mortgage categories, showing the AVR basic contribution, the RBC factor, and the PBR classification. The AVR and RBC factors are based on a combination of rates of default as well as recovery for defaults. As such, these are proxies for expected and tail losses.

NAIC Rating	AVR Factor	RBC Factor	PBR class
NAIC-1	0.04	0.40	PBR-6
CM-1	0.08	0.90	PBR-7
NAIC-2	0.19	1.30	PBR-9
CM-2	0.28	1.75	PBR-10
CM-3	0.52	3.00	PBR-11
CM-4	0.89	5.00	PBR-12
NAIC-3	0.93	4.60	PBR-12
CM-5	1.37	7.50	PBR-13
NAIC-4	2.13	10.00	PBR-15
NAIC-5	4.32		PBR-18

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Table K. Conversion from NAIC ARO Ratings and NAIC Designations to PBR Numeric Rating

Moody's Rating	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3
S&P Rating	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
Fitch Rating	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
DBRS Rating	AAA	AA high	AA	AA low	A high	A	A low	BBB high	BBB	BBB low
RealPoint Rating	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AM Best Rating	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-
NAIC Designation	1	1	1	1	1	1	1	2	2	2
NAIC Commercial Mortgage Designation							1			2
Numeric Rating	1	2	3	4	5	6	7	8	9	10

Moody's Rating	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca
S&P Rating	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC
Fitch Rating	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC
DBRS Rating	BB high	BB	BB low	B high	B	B low	CCC high	CCC	CCC low	CC
RealPoint Rating	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D
AM Best Rating	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-	cc
NAIC Designation	3	3	3	4	4	4	5	5	5	6
NAIC Commercial Mortgage Designation	3	4	5							
Numeric Rating	11	12	13	14	15	16	17	18	19	20

Amendment Proposal for 2015 Valuation Basic Table

Adopted by Life Actuarial (A) Task Force on 8/14/15
Adopted by Life Insurance and Annuities (A) Committee on 8/16/15

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group, to adopt the 2015 VBT

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:

   Valuation Manual (June 18, 2015), VM-20 Section 9.C

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.)

   See next page

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

   Update VM-20 to reference the 2015 Valuation Basic Table and remove reference to 2008 VBT

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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VM-20, Section 9.C.

3. Determination of Applicable Industry Basic Tables

a. The industry basic table shall be based on the most recent valuation basic table listed in VM-M Section 2, including the Primary, Limited Underwriting and RR Table forms, if available. The industry table used should be based on the table form that most appropriately reflects the risk characteristics of the respective mortality segment.

Deleted: 2008 VBT table

Deleted: **Guidance Note:** Paragraph 9.C.3.a will need to be revised every time the industry table is updated.

b. A modified industry basic table is permitted in a limited number of situations where an industry basic table does not appropriately reflect the expected mortality experience, such as joint life mortality, simplified underwriting, or substandard or rated lives. In cases other than modification of the table to reflect joint life mortality, the modification must not result in mortality rates lower than those in the industry table without approval by the commissioner.

c. The company may apply the underwriting criteria scoring procedure described in subparagraph d below to determine:

i. The industry basic table that can serve as the industry experience rates when company experience data is limited or not available.

ii. The applicable industry basic table for grading company experience mortality to industry experience mortality using the grading method described in subsection 9.C.6.b.iii.

d. The underwriting criteria scoring procedure is the algorithm used to score every risk class in a preferred risk class structure. The scoring is based on the specific underwriting criteria used by a company and embedded in the Underwriting Criteria Score Calculator which is maintained on the Society of Actuaries website, www.soa.org/Research/Experience-Study/Ind-Life/Valuation/2015-underwriting-criteria-calculator.aspx.

Deleted: described in pages 8 to 27 of the Interim 2007 Report of the Society of Actuaries and American Academy of Actuaries Joint Preferred Mortality Project

Deleted: www.soa.org/research/individual-life/2008-score-calc.aspx

i. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for a particular mortality segment, the company shall take into account factors that are not recognized in the underwriting scoring algorithm but which are applicable to policies that are issued in that mortality segment.

Guidance Note: Examples of such factors include the number of underwriting exceptions that are made, the quality and experience level of the underwriters, and characteristics of the distribution system. For example, if a company deviates from its preferred criteria on a regular basis, then it needs to take that into consideration since the underwriting criteria scoring procedure is not designed to quantify that risk.

ii. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for policies that are issued subject to simplified underwriting and policies that are issued without underwriting, the company shall take into account factors not recognized in the underwriting scoring algorithm but which are applicable to such policies.

iii. In taking into account factors that are not recognized in the underwriting scoring algorithm, a company may, to the extent it can justify, adjust the industry basic tables up or down two tables from that determined by application of the underwriting criteria scoring procedures. Further adjustments to reflect risk characteristics not captured within the underwriting criteria scoring tool may be allowed upon approval by the commissioner.

e. As an alternative to the Underwriting Criteria Scoring Tool, the company may use other actuarially sound methods to determine the applicable basic tables related to subdivisions of mortality segments. The company shall document the analysis performed to demonstrate the applicability of the chosen method and resulting choice in tables and reasons why the results using the Underwriting Criteria Scoring Tool may not be suitable.

Guidance Note: For example, the company may determine a more all-inclusive basic table as a table appropriate for the whole mortality segment (appropriately modified by the removal of classified lives, term conversions or any other legitimately excludable class) and then subdivide that segment using actuarially sound methods including but not limited to the UCS.

f. If no industry basic table appropriately reflects the risk characteristics of the mortality segment, the company may use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics in lieu of an industry basic table.

Guidance Note: Subsection 9.C.3.f above is intended to provide flexibility needed to handle products based on group-type mortality, etc., for which there might not be an industry basic table.

g. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the date of the industry basic table (e.g., 2015 for the 2015 VBT) to the valuation date may be incorporated using the improvement factors for the applicable industry table as determined by the SOA and published on the SOA website: www.soa.org/Research/Experience-Study/Ind-Life/Valuation/research-YYYY-improve-scale-recommendation.aspx.

Guidance Note: The improvement factors for the industry basic table will be determined by the SOA.

Guidance Note: The start date for the improvement factors to be applied to the industry basic tables differs from that used for determining company experience mortality rates as described in Subsection 9.C.2.h, as the industry basic tables have already been improved from the mid-point of the exposure period of the data underlying the table to the start date of the table—e.g., the 2015 VBT has already been improved from the mid-point of the underlying data supporting the table to 2015.

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group, to adopt the 2015 VBT

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:

Valuation Manual (June 18, 2015), VM-M, Section 2

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.)

Section 2. Industry Experience Valuation Basic Tables

Deleted: Mortality

1. 2008 Valuation Basic Table (2008 VBT)

2. 2015 Valuation Basic Table (2015 VBT)

The 2015 Valuation Basic Table is a valuation table without loads developed by the Academy and SOA jointly for use in determining a company's Prudent Estimate Mortality Assumption for valuations of Dec. 31, 2015 and later. The table consists of the Primary Table (Male, Female, Smoker, Nonsmoker and Composite), 10 Relative Risk tables for nonsmokers (male and female) and four Relative Risk tables for smokers (male and female). Rates for juvenile ages are included in the composite tables. The tables are on a select and ultimate and ultimate only basis, and are available on an age nearest and an age last birthday basis. The Tables were adopted by the NAIC at the [Summer] National Meeting in 2015, and can be found in the Proceedings of the NAIC [Vol. pages].

Deleted: SOA and

Deleted:

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

Update the Valuation Manual for the 2015 Valuation Basic Tables.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Amendment Proposal for Mortality Credibility Tables

Adopted by Life Actuarial (A) Task Force on 8/14/15
Adopted by Life Insurance and Annuities (A) Committee on 8/16/15

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Paul Graham, American Council of Life Insurers – Correct column heading relating to the use of mortality credibility

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:

   Valuation Manual (June 18, 2015), VM-20, Section 9.C.6.b.iii.C.

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.)

   See attached.

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

   In subsection 9.C.6.b.iii.C., the first column headings in both the charts are labeled as credibility of company data over sufficient data period. Subsection 9.C.4.c. allows a company to determine a single level of credibility over the entire exposure period. The sufficient data period and the exposure period may be inconsistent in some cases. The column headings in both the charts in subsection 9C.6.b.iiiC should be consistent with Section 9.C.4., using the exposure period to determine the level of credibility.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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C. Grading to 100% of the industry table must be completed no later than the number of years in column (4) after the duration when sufficient data no longer exists (as defined in paragraph (A) above).

Table effective for valuations December 31, 2016 and prior:

Credibility of company data (as defined in Section 9.C.4. above)(1)	Maximum # of years for data to be considered sufficient (2)	Maximum # of years in which to begin grading after sufficient data no longer exists (3)	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists) (4)
10-19%	10	2	10
20-39%	20	4	15
40-59%	30	6	18
60-79%	40	8	20
80-100%	50	10	25

Deleted: over sufficient¶ data period

Deleted: ¶

Table effective for valuations on and after January 1, 2017:

Credibility of company data (as defined in Section 9.C.4. above)(1)	Maximum # of years for data to be considered sufficient (2)	Maximum # of years in which to begin grading after sufficient data no longer exists (3)	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists) (4)
20-39%	10	2	8*
40-59%	20	4	12*
60-79%	35	7	17*
80-100%	50	10	25

Deleted: over sufficient¶ data period

Deleted: ¶

Amendment Proposal Form

AAA Life Reserve Work Group
Dave Neve, Chair

Modification to the treatment of the PIMR in the deterministic reserve

Adopted by Life Actuarial (A) Task Force on 8/14/15
Adopted by Life Insurance and Annuities (A) Committee on 8/16/15

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.~~e~~d 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. ~~–f~~e.. 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.~~

Amendment Proposal for Revised PBR Margins

Adopted by Life Actuarial (A) Task Force on 9/24/15

Adopted by Life Insurance and Annuities (A) Committee on 10/28/15

*Comments on this exposure should express the writer's opinion on one or any combination of the options below. The options provided are intentionally broad and are not intended to be an exhaustive list. The intent of the exposure is to solicit comments in a manner that preserves the Task Force's ability to consider adopting the option they favor most without having to have further exposures.

Options available for commenters' considerations are:

1) Adopt the PBR Margins as initially exposed (i.e., adopt both the Bühlmann Empirical Bayesian Method (including optional use of the credibility Z approximation) and the Limited Fluctuation Methods)
2) Adopt the PBR Margins are currently exposed (i.e., adopt both the Bühlmann Empirical Bayesian Method (including optional use of the credibility Z approximation) and the Limited Fluctuation Methods with the revised credibility ranges)
3) Adopt option 1 or 2 with the qualification that, once a method is selected, commissioner approval is required if the company seeks to switch methods.
4) Adopt the Limited Fluctuation Method, with or without the revised credibility ranges, as the only method.
5) Adopt the Bühlmann Empirical Bayesian Method, with or without the revised credibility ranges, as the only method, including the option to use the credibility Z approximation
6) Adopt the Bühlmann Empirical Bayesian Method, with or without the revised credibility ranges, as the only method, without the option to use the Z approximation.

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight 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:

   Valuation Manual (June 18, 2015), VM-20, Section 9.C.4 and Section 9.C.5

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.)

   See Next Page

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

   Update the valuation manual with revised margins for establishing Prudent Estimate Mortality Assumption.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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4. Credibility of Company Experience

   a. For valuations in which the industry mortality table is the 2008 VBT, determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility that follows common actuarial practice as published in actuarial literature (for example but not limited to the Limited Fluctuation Method or Bühlmann Empirical Bayesian Method).

   For valuations in which the industry mortality table is the 2015 VBT, determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility following either the Limited Fluctuation Method by amount, such that the minimum probability is at least 95% with an error margin of no more than 5% or Bühlmann Empirical Bayesian Method by amount. Once chosen, the credibility method must be applied to all business subject to VM-20 and requiring credibility percentages. A company seeking to change credibility methods must request and subsequently receive the approval of the commissioner. The request must include the justification for the change and a demonstration of the rationale supporting the change.

   Drafting Note: Determining the credibility using the Bühlmann Empirical Bayesian Method typically requires a statistical agent to calculate. The following formula can be utilized in conjunction with the 2015 VBT industry table to directly approximate:

$$\text{Bühlmann } Z = \frac{A}{A + \frac{(109\% * B) - (120.4\% * C)}{(0.019604 * A)}}$$

   where,

   A = Sum of expected deaths by amount = ∑ (amount insured) x (exposure) x (mortality)
   B = ∑(amount insured)^2 x (exposure) x (mortality)
   C = ∑(amount insured)^2 x (exposure)^2 x (mortality)^2

   b. Credibility may be determined at either the mortality segment level or at a more aggregate level if the mortality for the sub-classes (mortality segments) was determined using an aggregate level of mortality experience.

   c. A single level of credibility shall be determined over the entire exposure period, rather than for each duration within the exposure period. This overall level of credibility will be used to:

      i. Determine the prescribed margin for company experience mortality rates.

      ii. Determine the grading period (shown in column (4) in tables in Subsection 9.C.6.iii) for grading company experience mortality rates into the applicable industry basic table.

5. Prescribed Mortality Margins

   a. Separate prescribed margins will be added to company experience mortality rates, and to the applicable industry basic tables. The mortality margin shall be in the form of a prescribed percentage increase applied to each mortality rate.

   b. The prescribed margin percentages for the company experience mortality rates will vary by attained age (att age), by the level of credibility of the underlying company experience, based on the level of credibility and the method used to determine the credibility in subsection 9.C.4. The percentages are as follows:

      (i) For valuations in which the industry mortality table is the 2008 VBT:

	Credibility Level				
att age	0-19%	20-39%	40-59%	60-79%	80-100%
<45	21.0%	13.7%	8.4%	6.3%	5.3%

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Deleted: that follows common actuarial practice as published in actuarial literature

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Deleted: such that the minimum probability is at least 95% with an error margin of no more than 5%

Field Code Changed

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46-47	20.0%	13.0%	8.0%	6.0%	5.0%
48-49	19.0%	12.4%	7.6%	5.7%	4.8%
50-51	18.0%	11.7%	7.2%	5.4%	4.5%
52-53	17.0%	11.1%	6.8%	5.1%	4.3%
54-55	16.0%	10.4%	6.4%	4.8%	4.0%
56-57	15.0%	9.8%	6.0%	4.5%	3.8%
58-59	14.0%	9.1%	5.6%	4.2%	3.5%
60-61	13.0%	8.5%	5.2%	3.9%	3.3%
62-63	12.0%	7.8%	4.8%	3.6%	3.0%
64-68	11.0%	7.2%	4.4%	3.3%	2.8%
69-76	10.0%	6.5%	4.0%	3.0%	2.5%
77+	9.0%	5.9%	3.6%	2.7%	2.3%

(ii) For valuations in which the industry mortality table is the 2015 VBT and where the credibility is determined using the Bühlmann Empirical Bayesian Method by amount:

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Proposed_Bühlmann_Margins

	Credibility Level											
Ages	0-7%	8-12%	13-17%	18-22%	23-27%	28-32%	33-37%	38-42%	43-47%	48-52%	53-57%	58-62%
<47	20.4%	20.4%	20.4%	20.4%	20.0%	19.3%	18.6%	17.9%	17.1%	16.3%	15.5%	14.6%
46 to 47	20.2%	20.2%	20.2%	20.2%	20.0%	19.3%	18.6%	17.9%	17.1%	16.3%	15.5%	14.6%
48 to 49	20.0%	20.0%	20.0%	20.0%	19.7%	19.1%	18.4%	17.6%	16.9%	16.1%	15.3%	14.4%
50 to 51	19.8%	19.8%	19.8%	19.8%	19.4%	18.8%	18.1%	17.4%	16.7%	15.9%	15.1%	14.2%
52 to 53	19.6%	19.6%	19.6%	19.6%	19.1%	18.5%	17.8%	17.1%	16.4%	15.6%	14.8%	14.0%
54 to 55	19.2%	19.2%	19.2%	19.2%	18.8%	18.2%	17.5%	16.8%	16.1%	15.4%	14.6%	13.7%
56 to 57	18.9%	18.9%	18.9%	18.9%	18.5%	17.9%	17.2%	16.5%	15.8%	15.1%	14.3%	13.5%
58 to 59	18.5%	18.5%	18.5%	18.5%	18.1%	17.5%	16.9%	16.2%	15.5%	14.8%	14.1%	13.2%
60 to 61	18.2%	18.2%	18.2%	18.2%	17.8%	17.2%	16.5%	15.9%	15.2%	14.5%	13.8%	13.0%
62 to 63	17.8%	17.8%	17.8%	17.8%	17.4%	16.8%	16.2%	15.6%	14.9%	14.2%	13.5%	12.7%
64 to 65	17.4%	17.4%	17.4%	17.4%	17.0%	16.4%	15.8%	15.2%	14.6%	13.9%	13.2%	12.4%
66 to 67	16.9%	16.9%	16.9%	16.9%	16.6%	16.0%	15.4%	14.8%	14.2%	13.5%	12.8%	12.1%
68 to 69	16.5%	16.5%	16.5%	16.5%	16.2%	15.6%	15.0%	14.5%	13.8%	13.2%	12.5%	11.8%
70 to 71	16.1%	16.1%	16.1%	16.1%	15.7%	15.2%	14.6%	14.1%	13.5%	12.8%	12.2%	11.5%
72 to 73	15.6%	15.6%	15.6%	15.6%	15.3%	14.7%	14.2%	13.7%	13.1%	12.5%	11.8%	11.1%
74 to 75	15.1%	15.1%	15.1%	15.1%	14.8%	14.3%	13.8%	13.2%	12.7%	12.1%	11.5%	10.8%
76 to 77	14.6%	14.6%	14.6%	14.6%	14.3%	13.8%	13.3%	12.8%	12.2%	11.7%	11.1%	10.4%
78 to 79	14.1%	14.1%	14.1%	14.1%	13.8%	13.3%	12.8%	12.3%	11.8%	11.3%	10.7%	10.1%
80 to 81	13.6%	13.6%	13.6%	13.6%	13.3%	12.8%	12.4%	11.9%	11.4%	10.8%	10.3%	9.7%
82 to 83	13.0%	13.0%	13.0%	13.0%	12.7%	12.3%	11.9%	11.4%	10.9%	10.4%	9.9%	9.3%
84 to 85	12.5%	12.5%	12.5%	12.5%	12.2%	11.8%	11.4%	10.9%	10.4%	10.0%	9.4%	8.9%
86 to 87	11.9%	11.9%	11.9%	11.9%	11.6%	11.2%	10.8%	10.4%	10.0%	9.5%	9.0%	8.5%
88 to 89	11.3%	11.3%	11.3%	11.3%	11.1%	10.7%	10.3%	9.9%	9.5%	9.0%	8.6%	8.1%
90 to 91	10.7%	10.7%	10.7%	10.7%	10.5%	10.1%	9.7%	9.4%	9.0%	8.5%	8.1%	7.6%
92 to 93	10.1%	10.1%	10.1%	10.1%	9.8%	9.5%	9.2%	8.8%	8.4%	8.0%	7.6%	7.2%
94 to 95	9.4%	9.4%	9.4%	9.4%	9.2%	8.9%	8.6%	8.3%	7.9%	7.5%	7.1%	6.7%
96 to 97	8.8%	8.8%	8.8%	8.8%	8.6%	8.3%	8.0%	7.7%	7.4%	7.0%	6.6%	6.3%
98 to 99	8.1%	8.1%	8.1%	8.1%	7.9%	7.7%	7.4%	7.1%	6.8%	6.5%	6.1%	5.8%
100 to 101	7.4%	7.4%	7.4%	7.4%	7.3%	7.0%	6.8%	6.5%	6.2%	5.9%	5.6%	5.3%
102 to 103	6.7%	6.7%	6.7%	6.7%	6.6%	6.3%	6.1%	5.9%	5.6%	5.4%	5.1%	4.8%

104 to 105	6.0%	6.0%	6.0%	6.0%	5.9%	5.7%	5.5%	5.2%	5.0%	4.8%	4.5%	4.3%
106 and over 107	5.3%	5.3%	5.3%	5.3%	5.1%	5.0%	4.8%	4.6%	4.4%	4.2%	4.0%	3.8%

Proposed Bühlmann Margins

	Credibility Level											
Ages	63-67%	68-72%	73-77%	78-82%	83-87%	88-89%	90-91%	92-93%	94-95%	96-97%	98%	99%+
<47	13.7%	12.7%	11.6%	10.3%	8.9%	8.0%	7.3%	6.5%	5.7%	4.6%	3.3%	2.3%
46 to 47	13.7%	12.7%	11.6%	10.3%	8.9%	8.0%	7.3%	6.5%	5.7%	4.6%	3.3%	2.3%
48 to 49	13.5%	12.5%	11.4%	10.2%	8.8%	7.9%	7.2%	6.4%	5.6%	4.6%	3.2%	2.3%
50 to 51	13.3%	12.3%	11.2%	10.0%	8.7%	7.8%	7.1%	6.4%	5.5%	4.5%	3.2%	2.2%
52 to 53	13.1%	12.1%	11.1%	9.9%	8.6%	7.7%	7.0%	6.3%	5.4%	4.4%	3.1%	2.2%
54 to 55	12.9%	11.9%	10.9%	9.7%	8.4%	7.5%	6.9%	6.1%	5.3%	4.3%	3.1%	2.2%
56 to 57	12.6%	11.7%	10.7%	9.5%	8.3%	7.4%	6.8%	6.0%	5.2%	4.3%	3.0%	2.1%
58 to 59	12.4%	11.5%	10.5%	9.4%	8.1%	7.3%	6.6%	5.9%	5.1%	4.2%	3.0%	2.1%
60 to 61	12.1%	11.2%	10.3%	9.2%	7.9%	7.1%	6.5%	5.8%	5.0%	4.1%	2.9%	2.1%
62 to 63	11.9%	11.0%	10.0%	9.0%	7.8%	7.0%	6.4%	5.7%	4.9%	4.0%	2.8%	2.0%
64 to 65	11.6%	10.8%	9.8%	8.8%	7.6%	6.8%	6.2%	5.6%	4.8%	3.9%	2.8%	2.0%
66 to 67	11.3%	10.5%	9.6%	8.6%	7.4%	6.6%	6.1%	5.4%	4.7%	3.8%	2.7%	1.9%
68 to 69	11.0%	10.2%	9.3%	8.3%	7.2%	6.5%	5.9%	5.3%	4.6%	3.7%	2.6%	1.9%
70 to 71	10.7%	9.9%	9.1%	8.1%	7.0%	6.3%	5.7%	5.1%	4.4%	3.6%	2.6%	1.8%
72 to 73	10.4%	9.7%	8.8%	7.9%	6.8%	6.1%	5.6%	5.0%	4.3%	3.5%	2.5%	1.8%
74 to 75	10.1%	9.4%	8.5%	7.6%	6.6%	5.9%	5.4%	4.8%	4.2%	3.4%	2.4%	1.7%
76 to 77	9.8%	9.0%	8.3%	7.4%	6.4%	5.7%	5.2%	4.7%	4.0%	3.3%	2.3%	1.7%
78 to 79	9.4%	8.7%	8.0%	7.1%	6.2%	5.5%	5.0%	4.5%	3.9%	3.2%	2.3%	1.6%
80 to 81	9.1%	8.4%	7.7%	6.9%	5.9%	5.3%	4.9%	4.3%	3.8%	3.1%	2.2%	1.5%
82 to 83	8.7%	8.1%	7.4%	6.6%	5.7%	5.1%	4.7%	4.2%	3.6%	2.9%	2.1%	1.5%
84 to 85	8.3%	7.7%	7.0%	6.3%	5.5%	4.9%	4.5%	4.0%	3.5%	2.8%	2.0%	1.4%
86 to 87	7.9%	7.4%	6.7%	6.0%	5.2%	4.7%	4.2%	3.8%	3.3%	2.7%	1.9%	1.3%
88 to 89	7.6%	7.0%	6.4%	5.7%	4.9%	4.4%	4.0%	3.6%	3.1%	2.6%	1.8%	1.3%
90 to 91	7.1%	6.6%	6.0%	5.4%	4.7%	4.2%	3.8%	3.4%	3.0%	2.4%	1.7%	1.2%
92 to 93	6.7%	6.2%	5.7%	5.1%	4.4%	3.9%	3.6%	3.2%	2.8%	2.3%	1.6%	1.1%
94 to 95	6.3%	5.8%	5.3%	4.8%	4.1%	3.7%	3.4%	3.0%	2.6%	2.1%	1.5%	1.1%
96 to 97	5.9%	5.4%	5.0%	4.4%	3.8%	3.4%	3.1%	2.8%	2.4%	2.0%	1.4%	1.0%
98 to 99	5.4%	5.0%	4.6%	4.1%	3.5%	3.2%	2.9%	2.6%	2.2%	1.8%	1.3%	0.9%
100 to 101	5.0%	4.6%	4.2%	3.7%	3.2%	2.9%	2.6%	2.4%	2.1%	1.7%	1.2%	0.8%
102 to 103	4.5%	4.2%	3.8%	3.4%	2.9%	2.6%	2.4%	2.1%	1.9%	1.5%	1.1%	0.8%
104 to 105	4.0%	3.7%	3.4%	3.0%	2.6%	2.3%	2.1%	1.9%	1.7%	1.4%	1.0%	0.7%
106 and over 107	3.5%	3.3%	3.0%	2.7%	2.3%	2.1%	1.9%	1.7%	1.5%	1.2%	0.8%	0.6%

(iii) For valuations in which the industry mortality table is the 2015 VBT and where the credibility is determined using the Limited Fluctuation by amount method:

Proposed Limited Fluctuation Margins

	Credibility Level									
Ages	0-7%	8-12%	13-17%	18-22%	23-27%	28-32%	33-37%	38-42%	43-47%	48-52%
<45	20.4%	20.4%	17.4%	15.9%	14.5%	13.2%	12.1%	11.0%	10.0%	9.1%
46 to 47	20.2%	20.2%	17.4%	15.9%	14.5%	13.2%	12.1%	11.0%	10.0%	9.1%
48 to 49	20.0%	20.0%	17.2%	15.7%	14.3%	13.0%	11.9%	10.8%	9.9%	9.0%
50 to 51	19.8%	19.8%	17.0%	15.5%	14.1%	12.9%	11.7%	10.7%	9.7%	8.9%
52 to 53	19.6%	19.6%	16.7%	15.2%	13.9%	12.7%	11.5%	10.5%	9.6%	8.7%
54 to 55	19.2%	19.2%	16.4%	15.0%	13.6%	12.4%	11.3%	10.3%	9.4%	8.6%
56 to 57	18.9%	18.9%	16.1%	14.7%	13.4%	12.2%	11.1%	10.2%	9.3%	8.5%
58 to 59	18.5%	18.5%	15.8%	14.4%	13.1%	12.0%	10.9%	10.0%	9.1%	8.3%
60 to 61	18.2%	18.2%	15.5%	14.1%	12.9%	11.7%	10.7%	9.8%	8.9%	8.1%
62 to 63	17.8%	17.8%	15.2%	13.8%	12.6%	11.5%	10.5%	9.6%	8.7%	8.0%
64 to 65	17.4%	17.4%	14.8%	13.5%	12.3%	11.2%	10.2%	9.3%	8.5%	7.8%
66 to 67	16.9%	16.9%	14.5%	13.2%	12.0%	11.0%	10.0%	9.1%	8.3%	7.6%
68 to 69	16.5%	16.5%	14.1%	12.8%	11.7%	10.7%	9.7%	8.9%	8.1%	7.4%
70 to 71	16.1%	16.1%	13.7%	12.5%	11.4%	10.4%	9.5%	8.6%	7.9%	7.2%
72 to 73	15.6%	15.6%	13.3%	12.1%	11.1%	10.1%	9.2%	8.4%	7.7%	7.0%
74 to 75	15.1%	15.1%	12.9%	11.8%	10.7%	9.8%	8.9%	8.1%	7.4%	6.8%
76 to 77	14.6%	14.6%	12.5%	11.4%	10.4%	9.5%	8.6%	7.9%	7.2%	6.5%
78 to 79	14.1%	14.1%	12.0%	11.0%	10.0%	9.1%	8.3%	7.6%	6.9%	6.3%
80 to 81	13.6%	13.6%	11.6%	10.6%	9.6%	8.8%	8.0%	7.3%	6.7%	6.1%
82 to 83	13.0%	13.0%	11.1%	10.1%	9.2%	8.4%	7.7%	7.0%	6.4%	5.8%
84 to 85	12.5%	12.5%	10.6%	9.7%	8.8%	8.1%	7.4%	6.7%	6.1%	5.6%
86 to 87	11.9%	11.9%	10.1%	9.2%	8.4%	7.7%	7.0%	6.4%	5.8%	5.3%
88 to 89	11.3%	11.3%	9.6%	8.8%	8.0%	7.3%	6.7%	6.1%	5.5%	5.1%
90 to 91	10.7%	10.7%	9.1%	8.3%	7.6%	6.9%	6.3%	5.7%	5.2%	4.8%
92 to 93	10.1%	10.1%	8.6%	7.8%	7.1%	6.5%	5.9%	5.4%	4.9%	4.5%
94 to 95	9.4%	9.4%	8.0%	7.3%	6.7%	6.1%	5.6%	5.1%	4.6%	4.2%
96 to 97	8.8%	8.8%	7.5%	6.8%	6.2%	5.7%	5.2%	4.7%	4.3%	3.9%
98 to 99	8.1%	8.1%	6.9%	6.3%	5.7%	5.2%	4.8%	4.4%	4.0%	3.6%
100 to 101	7.4%	7.4%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%	3.6%	3.3%
102 to 103	6.7%	6.7%	5.7%	5.2%	4.8%	4.3%	4.0%	3.6%	3.3%	3.0%
104 to 105	6.0%	6.0%	5.1%	4.7%	4.3%	3.9%	3.5%	3.2%	2.9%	2.7%
106 and over 107	5.3%	5.3%	4.5%	4.1%	3.7%	3.4%	3.1%	2.8%	2.6%	2.4%

Proposed Limited Fluctuation Margins									
	Credibility Level								
Ages	53-57%	58-62%	63-67%	68-72%	73-77%	78-82%	83-87%	88-92%	93-100%
<45	8.3%	7.6%	6.9%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%
46 to 47	8.3%	7.6%	6.9%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%
48 to 49	8.2%	7.5%	6.8%	6.2%	5.7%	5.2%	4.7%	4.3%	3.9%
50 to 51	8.1%	7.4%	6.7%	6.1%	5.6%	5.1%	4.7%	4.2%	3.9%
52 to 53	8.0%	7.3%	6.6%	6.0%	5.5%	5.0%	4.6%	4.2%	3.8%
54 to 55	7.8%	7.2%	6.5%	5.9%	5.4%	4.9%	4.5%	4.1%	3.8%
56 to 57	7.7%	7.0%	6.4%	5.8%	5.3%	4.9%	4.4%	4.0%	3.7%
58 to 59	7.6%	6.9%	6.3%	5.7%	5.2%	4.8%	4.3%	4.0%	3.6%
60 to 61	7.4%	6.8%	6.2%	5.6%	5.1%	4.7%	4.3%	3.9%	3.5%
62 to 63	7.2%	6.6%	6.0%	5.5%	5.0%	4.6%	4.2%	3.8%	3.5%
64 to 65	7.1%	6.5%	5.9%	5.4%	4.9%	4.5%	4.1%	3.7%	3.4%
66 to 67	6.9%	6.3%	5.7%	5.2%	4.8%	4.4%	4.0%	3.6%	3.3%
68 to 69	6.7%	6.1%	5.6%	5.1%	4.7%	4.2%	3.9%	3.5%	3.2%
70 to 71	6.6%	6.0%	5.4%	5.0%	4.5%	4.1%	3.8%	3.4%	3.1%
72 to 73	6.4%	5.8%	5.3%	4.8%	4.4%	4.0%	3.7%	3.3%	3.0%
74 to 75	6.2%	5.6%	5.1%	4.7%	4.3%	3.9%	3.5%	3.2%	2.9%
76 to 77	6.0%	5.4%	5.0%	4.5%	4.1%	3.8%	3.4%	3.1%	2.9%
78 to 79	5.8%	5.2%	4.8%	4.4%	4.0%	3.6%	3.3%	3.0%	2.8%
80 to 81	5.5%	5.0%	4.6%	4.2%	3.8%	3.5%	3.2%	2.9%	2.6%
82 to 83	5.3%	4.8%	4.4%	4.0%	3.7%	3.4%	3.1%	2.8%	2.5%
84 to 85	5.1%	4.6%	4.2%	3.9%	3.5%	3.2%	2.9%	2.7%	2.4%
86 to 87	4.8%	4.4%	4.0%	3.7%	3.4%	3.1%	2.8%	2.5%	2.3%
88 to 89	4.6%	4.2%	3.8%	3.5%	3.2%	2.9%	2.6%	2.4%	2.2%
90 to 91	4.4%	4.0%	3.6%	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%
92 to 93	4.1%	3.7%	3.4%	3.1%	2.8%	2.6%	2.4%	2.2%	2.0%
94 to 95	3.8%	3.5%	3.2%	2.9%	2.7%	2.4%	2.2%	2.0%	1.8%
96 to 97	3.6%	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%
98 to 99	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%
100 to 101	3.0%	2.8%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%	1.4%
102 to 103	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%	1.4%	1.3%
104 to 105	2.4%	2.2%	2.0%	1.9%	1.7%	1.5%	1.4%	1.3%	1.2%
106 and over 107	2.1%	2.0%	1.8%	1.6%	1.5%	1.4%	1.2%	1.1%	1.0%

c. The prescribed margin percentages for the applicable industry basic tables will vary by attained age and are as follows:

(i) For valuations in which the industry mortality table is the 2008 VBT:

Mortality Margin (Loading) for Industry Table			
Attained Age	Load	Attained Age	Load
< 40	21%	65	11%
40	21%	66	11%
41	21%	67	11%
42	21%	68	11%
43	21%	69	10%
44	21%	70	10%
45	21%	71	10%
46	20%	72	10%
47	20%	73	10%
48	19%	74	10%
49	19%	75	10%
50	18%	76	10%
51	18%	77	9%
52	17%	78	9%
53	17%	79	9%
54	16%	80	9%
55	16%	81	9%
56	15%	82	9%
57	15%	83	9%
58	14%	84	9%
59	14%	85	9%
60	13%	86	9%
61	13%	87	9%
62	12%	88	9%
63	12%	89	9%
64	11%	90	9%

(ii) For valuations in which the industry table is the 2015 VBT~~on or after January 1, 2017~~:

Mortality Margin (Loading) for Industry Table							
Attained Age			Load	Attained Age			Load
0	to	45	20.4%	76	to	77	14.6%
46	to	47	20.2%	78	to	79	14.1%
48	to	49	20.0%	80	to	81	13.6%
50	to	51	19.8%	82	to	83	13.0%
52	to	53	19.6%	84	to	85	12.5%
54	to	55	19.2%	86	to	87	11.9%
56	to	57	18.9%	88	to	89	11.3%
58	to	59	18.5%	90	to	91	10.7%
60	to	61	18.2%	92	to	93	10.1%
62	to	63	17.8%	94	to	95	9.4%
64	to	65	17.4%	96	to	97	8.8%
66	to	67	16.9%	98	to	99	8.1%
68	to	69	16.5%	100	to	101	7.4%
70	to	71	16.1%	102	to	103	6.7%
72	to	73	15.6%	104	to	105	6.0%
74	to	75	15.1%	106	and	over	5.3%

Deleted: Mortality Margin Table¶
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d. The prescribed margin percentages shall be increased, as appropriate, to reflect the level of uncertainty related to situations, including, but not limited to, the following:

i. The reliability of the company's experience studies is low due to imprecise methodology, length of time since the data was updated or other reasons.

ii. The longer the time since the experience data was updated.

iii. The underwriting or risk selection risk criteria associated with the mortality segment have changed since the experience on which the company experience mortality rates are based was collected.

iv. The data underlying the company experience mortality rates lack homogeneity.

v. Unfavorable environmental or health developments are unfolding and are expected to have a material and sustained impact on the insured population.

vi. Changes to the company's marketing or administrative practices or market forces expose the policies to the risk of anti-selection.

Guidance Note: For example, the secondary market for life insurance policies.

vii. Underwriting is less effective than expected.

Amendment Proposal Revisions to the UCS

Adopted by Life Actuarial (A) Task Force on 9/24/15

Adopted by Life Insurance and Annuities (A) Committee on 10/28/15

The exposure of this amendment proposal includes exposure of the UCS, accessible via the links provided in the proposed edits to Section 9.C.3.d.

Comments on the Revisions to the UCS should address whether the commenter prefers the UCS calculator link in Section 9.C.3.d to remain there or be moved to an appendix (e.g., VM-M) or some other section within the valuation manual. The commenter should specifically state why moving or not moving the links will benefit users of the valuation manual.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group, to adopt the Underwriting Scoring Criteria (UCS)

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:

   Valuation Manual (June 18, 2015), VM-20 Section 9.C.3.d

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.)

   See next page

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

   Update VM-20 to adopt and reference the Underwriting Scoring Criteria.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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3. Determination of Applicable Industry Basic Tables

a. The industry basic table shall be based on the most recent valuation basic table listed in VM-M Section 2, including the Primary, Limited Underwriting and RR Table forms, if available. The industry table used should be based on the table form that most appropriately reflects the risk characteristics of the respective mortality segment.

b. A modified industry basic table is permitted in a limited number of situations where an industry basic table does not appropriately reflect the expected mortality experience, such as joint life mortality, simplified underwriting, or substandard or rated lives. In cases other than modification of the table to reflect joint life mortality, the modification must not result in mortality rates lower than those in the industry table without approval by the commissioner.

c. The company may apply the underwriting criteria scoring procedure described in subparagraph d below to determine:

i. The industry basic table that can serve as the industry experience rates when company experience data is limited or not available.

ii. The applicable industry basic table for grading company experience mortality to industry experience mortality using the grading method described in subsection 9.C.6.b.iii.

d. The underwriting criteria scoring procedure is the algorithm embedded in the Underwriting Criteria Score Calculator, adopted by the Life Actuarial (A) Task Force and maintained on the Society of Actuaries website (www.soa.org/Research/Experience-Study/Ind-Life/Valuation/2015-underwriting-criteria-calculator.aspx), which is used to score every risk class in a preferred risk class structure. The scoring is based on the specific underwriting criteria used by a company.

i. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for a particular mortality segment, the company shall take into account factors that are not recognized in the underwriting scoring algorithm but which are applicable to policies that are issued in that mortality segment.

Guidance Note: Examples of such factors include the number of underwriting exceptions that are made, the quality and experience level of the underwriters, and characteristics of the distribution system. For example, if a company deviates from its preferred criteria on a regular basis, then it needs to take that into consideration since the underwriting criteria scoring procedure is not designed to quantify that risk.

ii. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for policies that are issued subject to simplified underwriting and policies that are issued without underwriting, the company shall take into account factors not recognized in the underwriting scoring algorithm but which are applicable to such policies.

iii. In taking into account factors that are not recognized in the underwriting scoring algorithm, a company may, to the extent it can justify, adjust the industry basic tables up or down two tables from that determined by application of the underwriting criteria scoring procedures. Further adjustments to reflect risk characteristics not captured within the underwriting criteria scoring tool may be allowed upon approval by the commissioner.

e. As an alternative to the Underwriting Criteria Scoring Tool, the company may use other actuarially sound methods to determine the applicable basic tables related to subdivisions of mortality segments. The company shall document the analysis performed to demonstrate the applicability of the chosen method and resulting choice in tables and reasons why the results using the Underwriting Criteria Scoring Tool may not be suitable.

Guidance Note: For example, the company may determine a more all-inclusive basic table as a table appropriate for the whole mortality segment (appropriately modified by the removal of classified lives, term conversions or any other legitimately excludable class) and then subdivide that segment using actuarially sound methods including but not limited to the UCS.

f. If no industry basic table appropriately reflects the risk characteristics of the mortality segment, the company may use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics in lieu of an industry basic table.

Guidance Note: Subsection 9.C.3.f above is intended to provide flexibility needed to handle products based on group-type mortality, etc., for which there might not be an industry basic table.

g. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the date of the industry basic table (e.g., 2015 for the 2015 VBT) to the valuation date may be incorporated using the improvement factors for the applicable industry table as determined by the SOA and published on the SOA website: www.soa.org/Research/Experience-Study/Ind-Life/Valuation/research-YYYY-improve-scale-recommendation.aspx.

Guidance Note: The improvement factors for the industry basic table will be determined by the SOA.

Guidance Note: The start date for the improvement factors to be applied to the industry basic tables differs from that used for determining company experience mortality rates as described in Subsection 9.C.2.h, as the industry basic tables have already been improved from the mid-point of the exposure period of the data underlying the table to the start date of the table—e.g., the 2015 VBT has already been improved from the mid-point of the underlying data supporting the table to 2015.

Guidance Note: YYYY in the link provided in Section 9.C.3.g is a placeholder for the calendar year of valuation.

Amendment Proposal for the

Treatment of YRT Reinsurance in

The Stochastic Exclusion Ratio Test

Adopted by Life Actuarial (A) Task Force on 10/15/15
Adopted by Life Insurance and Annuities (A) Committee on 10/28/15

DRAFT

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.

   Treatment of YRT reinsurance in Stochastic Exclusion Ratio Test

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: Requirements for Principle-based Reserves for Life Products, Valuation Manual (Unofficial Version) dated 12/31/2014, Section 6.A.2.

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.)

   See attached document.

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

   When calculating the ratio for the Stochastic Exclusion Test, a company can get a dramatically different result before reinsurance and after reinsurance when the reinsurance is non-proportional (e.g., YRT mortality risk reinsurance). When performing the Stochastic Exclusion Ratio Test, (b – a)/ c, quota-share coinsurance is likely to scale "a," "b," and "c" roughly in proportion to (1- quota-share percentage) resulting in a similar ratio both pre- and post-reinsurance. Under YRT reinsurance, however, "a" and "b" are likely to be of similar magnitude both pre- and post- reinsurance, but "c" will be reduced by the ceded mortality benefits. As a result, the ratio post- YRT reinsurance is likely to be larger than the ratio pre- YRT reinsurance.

   The proposed amendment provides an approach to reflect the impact of ceded YRT reinsurance when performing the Stochastic Exclusion Ratio Test.

   In the case of companies that assume YRT reinsurance (or possibly other forms of non-proportional reinsurance), the converse concern might arise: a company could choose to aggregate YRT reinsurance with other business that would not, by itself, pass the SERT, thereby avoiding the calculation of a Stochastic Reserve in a situation where it properly should not be excluded. We feel such aggregation is already addressed and would be impermissible under subparagraph A.2.b.i.3(c) of Section 6, which states that the company "[m]ay not group together contract types with significantly different risk profiles for purposes of calculating this ratio."

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NAIC Staff Comments:

DRAFT

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Section 6. Stochastic and Deterministic Exclusion Tests

A. Stochastic Exclusion Test

2. Stochastic Exclusion Ratio Test

a. In order to exclude a group of policies from the stochastic reserve requirements using the method allowed under Section 6.A.1.a, a company shall demonstrate that the ratio of (b-a)/c is less than ~~4.5~~0.0% where:

i. a = the adjusted deterministic reserve described in subsection 6.A.2.b.i using the baseline economic scenario described in Appendix 1.

ii. b = the largest adjusted deterministic reserve described in subsection 6.A.2.b.i under any of the other 15 economic scenarios described in Appendix 1.

iii. c = an amount calculated from the baseline economic scenario described in Appendix 1 that represents the present value of benefits for the policies, adjusted for reinsurance by subtracting ceded benefits. For clarity, premium, ceded premium, expense, reinsurance expense allowance, modified coinsurance reserve adjustment and reinsurance experience refund cash flows shall not be considered "benefits," but items such as death benefits, surrender or withdrawal benefits and policyholder dividends shall be. For this purpose, the company shall use the benefits cash flows from the calculation of quantity "a," and calculate the present value of those cash flows using the same path of discount rates as used for "a."

~~**Drafting Note**: Empirical testing of the reinsurance adjustment to "iii" should encompass its impact in the case of YRT reinsurance as well as consistency of results among similar coinsurance, coinsurance with funds withheld, and modified coinsurance forms. A Guidance Note may prove necessary to address further judgment in the case of YRT.~~

b. In calculating the ratio in item a above, the company:

i. Shall calculate an adjusted deterministic reserve for the group of policies for each of the 16 scenarios that is equal to the deterministic reserve defined in Section 4.A, but with the following differences:

1. Using anticipated experience assumptions with no margins;

2. Using the interest rates and equity return assumptions specific to each scenario; and

3. Using net asset earned rates specific to each scenario to discount the cash flows.

(a) Shall use the most current available baseline economic scenario and the 15 other economic scenarios published by the NAIC. The methodology for creating these scenarios can be found in Appendix 1 of ~~the 20~~this VM-20.

(b) Shall use anticipated experience assumptions within each scenario that are dynamically adjusted as appropriate for consistency with each tested scenario.

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Comment [RD1]: Drafting note can now be deleted because the issue is addressed in new Section 6.A.2.c of this proposed amendment.

(c) May not group together contract types with significantly different risk profiles for purposes of calculating this ratio.

(d) Mortality improvement beyond the projection start date may not be reflected in anticipated experience assumptions for the purpose of the calculating the stochastic exclusion ratio.

ii. Alternatively, a company may use gross premium reserves developed from the cash flows from the company's Asset Adequacy Analysis models in lieu of the deterministic reserve. In this case, the company may use the experience assumptions of the company's cash flow analysis as the anticipated experience assumptions. The interest rates and discount rates will be those defined in b.i.2. and b.i.3. above.

c. If the ratio calculated in paragraph (a) above is less than 6.0% pre-YRT reinsurance, but is greater than 6.0% post- YRT reinsurance, the group of policies will still pass the Stochastic Exclusion Test if the company can demonstrate that the sensitivity of the adjusted deterministic reserve to economic scenarios is comparable pre- and post- YRT reinsurance.

i. An example of an acceptable demonstration:

1. For convenience in notation
   - SERT = the ratio (b-a)/c defined in (a) above
   - The pre- YRT reinsurance results are "gross of YRT," with a subscript "gy," so denoted $SERT_{gy}$
   - The post- YRT results are "net of YRT," with subscript "ny," so denoted $SERT_{ny}$

2. If a block of business being tested is subject to one or more YRT reinsurance cessions as well as other forms of reinsurance, such as coinsurance, take "gross of YRT" to mean net of all non-YRT reinsurance but ignoring the YRT contract(s), and "net of YRT" to mean net of *all* reinsurance contracts. That is, treat YRT reinsurance as the last reinsurance in, and compute certain values below with and without that last component.

3. So, if $SERT_{gy} < 0.060$ but $SERT_{ny} > 0.060$, then compute the Largest Percent Increase in Reserve (LPIR) = (b – a)/a , both "gross of YRT" and "net of YRT."

$$LPIR_{gy} = (b_{gy} - a_{gy})/a_{gy}$$

$$LPIR_{ny} = (b_{ny} - a_{ny})/a_{ny}$$

Note that the scenario underlying b_{gy} could be different than the scenario underlying b_{ny}.

If $SERT_{gy} \times LPIR_{ny}/LPIR_{gy} < 0.060$, then the block of policies passes the Stochastic Exclustion Ratio Test.

ii. Another more qualitative approach is to calculate the adjusted deterministic reserves for the 16 scenarios both gross and net of reinsurance to demonstrate that there is a similar pattern of sensitivity by scenario.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group- adoption of new CSO tables

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:

   Valuation Manual (June 18, 2015), VM-A

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.)

   See attached pages

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

   To include Appendix A-814 to list of appendix references specifically to recognize the 2001 CSO Tables for valuation and nonforfeiture.

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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VM-A: APPENDIX A REQUIREMENTS

Unless otherwise noted, ~~T~~this appendix references the following reserve requirements from Appendix A of the *Accounting Practices and Procedures Manual* which are to be used for policies issued on and after the Valuation Manual operative date unless otherwise provided for in the Valuation Manual.

INDEX

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~~APPM~~ Reference~~N~~	TITLE
A-200	Separate Accounts Funding Guaranteed Minimum Benefits Under Group Contracts
A-235	Interest-Indexed Annuity Contracts
A-250	Variable Annuities
A-255	Modified Guaranteed Annuities
A-270	Variable Life Insurance
A-585	Universal Life Insurance
A-588	Modified Guaranteed Life Insurance
A-620	Accelerated Benefits
A-641	Long Term Care Insurance
A-695	Synthetic Guaranteed Investment Contracts
A-785	Credit for Reinsurance
A-791	Life and Health Reinsurance Agreements
A-812	Smoker/Nonsmoker Mortality Tables for Use in Determining Minimum Reserve Liabilities
VM-A-814	Recognition of the 2001 CSO Mortality Table for Use in Determining Minimum Reserve Liabilities and Nonforfeiture Benefits Model Regulation (Model #814 NAIC adoption 2002)
A-815	Model Regulation Permitting the Recognition of Preferred Mortality Tables for Use in Determining Minimum Reserve Liabilities
A-817	Preneed Life Insurance Minimum Standards
A-820	Minimum Life and Annuities Reserve Standards
A-821	Annuity Mortality Table for Use in Determining Reserve Liabilities for Annuities
A-830	Valuation of Life Insurance Policies (Including the Introduction and Use of New Select Mortality Factors)

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group– adoption of new CSO tables

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:

   Valuation Manual (June 18, 2015), VM-M Section 1.H.

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.)

   See attached pages

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

   To adopt the 2017 CSO Tables for valuation and nonforfeiture.

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

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Notes:			

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VM-M: APPENDIX M MORTALITY TABLES

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Definitions

A. "Composite mortality table" means a mortality table with rates of mortality that do not distinguish between smokers and nonsmokers.

B. "Smoker and nonsmoker mortality table" means a mortality table with separate rates of mortality for smokers and nonsmokers.

Section 1. Valuation Mortality Tables

A. 1959 Accidental Death Benefits Table

B. 1961 Commissioners Standard Industrial Mortality Table

Composite Table (1961 CSI)

Proceedings of the NAIC, 1961 Volume II – pages 538- 540

C. 1961 Commissioners Industrial Extended Term Insurance Table

Composite Table (1961 CIET)

Proceedings of the NAIC, 1961 Volume II – pages 541- 543

D. 1980 Commissioners Standard Ordinary Mortality Tables

1. Composite Tables (with optional 10 Ten-Year Select Mortality Factors) (1980 CSO)

Proceedings of the NAIC, 1980 Volume I – page 598

2. Smoker/Nonsmoker tables (1980 CSO NS and 1980 CSO SM)

Proceedings of the NAIC, 1984 – pages 406 – 413

3. Blended tables (1980 CSO B, 1980 CSO C, 1980 CSO D, 1980 CSO E, 1980 CSO F)

Proceedings of the NAIC, 1984 – pages 396 – 400

E. 1980 Commissioners Extended Term Insurance Tables

1. Composite Tables (1980 CET)

Proceedings of the NAIC, 1980 Volume I – page 619

2. Smoker/Nonsmoker tables (1980 CET NS and 1980 CET SM)

Proceedings of the NAIC, 1984 – pages 406 – 413

3. Blended tables (1980 CET B, 1980 CET C, 1980 CET D, 1980 CET E, 1980 CET F)

Proceedings of the NAIC, 1984 – pages 396 – 400

F. 1983 Group Annuity Mortality Table without projection

G. 2001 Commissioners Standard Ordinary Mortality tables (2001 CSO)

1. "2001 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002). Unless the context indicates otherwise, the "2001 CSO Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

2. "2001 CSO (F)" means that mortality table consisting of the rates of mortality for female lives from the 2001 CSO Mortality Table.

3. "2001 CSO (M)" means that mortality table consisting of the rates of mortality for male lives from the 2001 CSO Mortality Table.

4. "2001 CSO Preferred Class Structure Mortality Table" means mortality tables with separate rates of mortality for super preferred nonsmokers, preferred nonsmokers, residual standard nonsmokers, preferred smokers, and residual standard smoker splits of the 2001 CSO Nonsmoker and Smoker Tables, as adopted by the NAIC at the September, 2006 national meeting and published in the *NAIC Proceedings {3rd Quarter 2006}*. Unless the context indicates otherwise, the "2001 CSO Preferred Class Structure Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables and the gender composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table.

H. 2017 Commissioners Standard Ordinary Mortality tables (2017 CSO)

1. "2017 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the CSO Subgroup of the Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group from the 2015 Valuation Basic Mortality Table developed by the joint group's Valuation Basic Mortality Subgroup, and adopted by the NAIC in {November 2015}. The 2017 CSO Mortality Table is included in the Proceedings of the NAIC (Xnd Quarter 2015). Unless the context indicates otherwise, the "2017 CSO Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the ~~unismoker~~composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

2. "2017 CSO (F)" means that mortality table consisting of the rates of mortality for female lives from the 20~~01~~17 CSO Mortality Table.

3. "2017 CSO (M)" means that mortality table consisting of the rates of mortality for male lives from the 2017~~01~~ CSO Mortality Table.

4. "2017 CSO Preferred Class Structure Mortality Table" means those mortality tables with separate rates of mortality for super preferred nonsmokers, preferred nonsmokers, residual standard nonsmokers, preferred smokers, and residual standard smoker splits of the 2017 CSO Nonsmoker and Smoker Tables, as adopted by the NAIC at the November 2015 national meeting and published in the *NAIC Proceedings {X Quarter 2015}*. Unless the context indicates otherwise, the "2017 CSO Preferred Class Structure Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
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   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group– adoption of new CSO tables

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:

   Valuation Manual (June 18, 2015), VM-02 Section 5.A.

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.)

   See attached pages.

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

   To adopt the 2017 CSO Tables for Nonforfeiture. The tables would be available for policies issued on or after January 1, 2017 and required for policies issued on or after January 1, 2020.

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VM-02

VM-02 MINIMUM NONFORFEITURE MORTALITY AND INTEREST

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Section 1. Purpose

A. The purpose of this VM-02 is to assign the appropriate Commissioners' Standard mortality table and interest rate for use in determining the minimum nonforfeiture standard for life insurance policies issued on and after the operative date of this Valuation Manual as authorized by applicable state requirements.

Section 2. Applicability

A. Any state requirements shall supersede requirements of this VM-02 if conflicted.

B. Requirements in this VM-02 apply to life insurance policies issued on and after the operative date of this Valuation Manual.

Section 3. Definitions

A. Industrial Life Insurance is that form of life insurance written under policies under which premiums are payable monthly or more often, bearing the words "industrial policy" or "weekly premium policy" or words of similar import imprinted upon the policies as part of the descriptive matter, and issued by an insurer which, as to such industrial life insurance, is operating under a system of collecting a debit by its agent.

B. Pre-Need – Any life insurance policy or certificate that is issued in combination with, in support of, with an assignment to, or as a guarantee for a prearrangement agreement for goods and services to be provided at the time of and immediately following the death of the insured. Goods and services may include, but are not limited to, embalming, cremation, body preparation, viewing or visitation, coffin or urn, memorial stone, and transportation of the deceased. The status of the policy or contract as preneed insurance is determined at the time of issue in accordance with the policy form filing. (Note: Preceding definition taken from Model 817.) The definition of pre-need shall be subject to that definition of pre-need in a particular state of issue if such definition is different in that state. [Note: To be completed.]

C. Ordinary Life

Section 4. Interest

A. The nonforfeiture interest rate for any life insurance policy issued in a particular calendar year beginning on and after the operative date of the Valuation Manual shall be equal to one hundred and twenty-five percent (125%) of the calendar year statutory valuation interest rate defined for the Net Premium Reserve in the Valuation Manual for a life insurance policy with nonforfeiture values, whether or not such sections apply to such policy for valuation purposes, rounded to the nearer one quarter of one percent (1/4 of 1%), provided, however, that the nonforfeiture interest rate shall not be less than 4.00%.

Guidance Note: For flexible premium universal life insurance policies as defined in section 3.D. of the Universal Life Insurance Model Regulation (NAIC Model 585), this is not intended to prevent an interest rate guarantee less than the nonforfeiture interest rate.

Section 5. Mortality

Guidance Note: As any new Commissioners' Standard tables are adopted in the future, language or paragraphs will need to be added here to define what business is to use which tables. This will need to be coordinated with the valuation requirements contained in other sections of the Valuation Manual. Because of the various implications to systems, form filings, and related issues (such as product tax issues), lead time is needed to implement new requirements without market disruption. Thus, it is recommended that the transition period referenced in the guidance note in Section 3.C.1.b of VM-20 be adopted; that is, that there be a transition period of about 4.5 years, that the table be adopted by July 1 of a given year, that it be permitted to be used starting Jan. 1 of the second following calendar year; that it be optional until Jan. 1 of the fifth following calendar year, thereafter mandatory.

A. Ordinary Life Insurance Policies

1. For ordinary life insurance policies issued on or after January 1, 2017 and prior to January 1, 2020, except as provided in paragraph 2, and in subsection B below, the minimum nonforfeiture standard shall be determined using the 2001 Commissioners Standard Ordinary Mortality Table as defined in Appendix M of this manual, and subject to the conditions defined in VM-A-814 in Appendix A of this manual for using this mortality table for minimum nonforfeiture standards. The 2001 Commissioners Standard Ordinary Preferred Class Structure Tables shall not be used to determine the minimum nonforfeiture standard.

2. Subject to the conditions stated below, the 2017 CSO Mortality Table as defined in VM-M Section 1.H.,
   a. may, at the election of the company, for one or more specified plans of insurance issued on or after January 1, 2017, and
   b. shall, for policies issued on or after January 1, 2020 to which Section 5cH(6) of the Standard Nonforfeiture Law for Life Insurance (NAIC Model #808) is applicable,

   be used to determine minimum Nonforfeiture standards according the the Standard Nonforfeiture Law (NAIC Model #808) or the state's equivalent statute. The 2017 Commissioners Standard Ordinary Preferred Structure Tables shall not be used to determine the minimum nonforfeiture standard.

3. The following conditions shall apply with respect to the use of the 2017 CSO mortality table:

   a. For each plan of insurance with separate rates for smokers and nonsmokers, an insurer may use:

      (1) Composite mortality tables to determine minimum cash surrender values and amounts of paid-up nonforfeiture benefits; or

      (2) Smoker and nonsmoker mortality to determine minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

   b. For plans of insurance without separate rates for smokers and nonsmokers, the composite mortality tables shall be used.

   c. For the purpose of determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits, the 2017 CSO Mortality Table may, at the option of the company for each plan of insurance, be used in its ultimate or select and ultimate form.

   d. Gender-Blended Tables shall apply in the following circumstances:

      (1) For any ordinary life insurance policy delivered or issued for delivery that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a mortality table that is a blend of the 2017 CSO Mortality Table (M) and the 2017 CSO Mortality Table (F) may, at the option of the company for each plan of insurance, be used in determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

Comment [A1]: Revised 8/13

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VM-02

B. Pre-Need Life Insurance Policies

1. Pre-need life insurance policies issued on or after the operative date of this Valuation Manual shall have the minimum nonforfeiture standard computed based on the 1980 Commissioners Standard Ordinary Mortality Tables as defined in Appendix M.

C. Same Minimum Nonforfeiture Standard for Men and Women

1. For any ordinary life insurance policy that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, the minimum nonforfeiture standard shall use the gender-blended mortality derived from the mortality table assigned in this VM-02 for use in determining the minimum nonforfeiture standard. Weights used to determine the gender-blended table shall follow those provided in the NAIC Model #811, *NAIC Procedure for Permitting Same Minimum Nonforfeiture Standards for Men and Women Insured Under 1980 CSO and CET Tables*. The company may choose from among the blended tables, as appropriate, developed by the American Academy of Actuaries CSO Task Force and adopted by the NAIC in December 2002 (preceding sentence taken from Model #814, section 7, B). These tables are defined in Appendix M under Gender Blended Tables.

D. Industrial Life Insurance

1. The minimum nonforfeiture standard values for Industrial Life Insurance policies shall be determined using the 1961 Industrial Standard Mortality Tables as defined in Appendix M.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group – adoption of new CSO tables

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:

   Valuation Manual (June 18, 2015), VM-20 Sections 3 and 6

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.)

   See attached pages

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

   To adopt the 2017 CSO Tables for valuation. Changes include:
   Section 3A – direct products other than Term and ULSG to use methods from VM-A and VM-C, but mortality from Section 3.C.1.
   Section 3.C.1 – define conditions for mortality tables
   Section 6.A. – Direct small companies to use methods from VM-A and VM-C but mortality from Section 3.C.1.

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

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Section 1. Purpose and Definitions

A. These requirements establish the minimum reserve valuation standard for individual life insurance policies issued on or after the operative date of the Valuation Manual and subject to a PBR valuation with a net premium reserve floor under the Standard Valuation Law.

B. These requirements constitute the Commissioner's Reserve Valuation Method (CRVM) for policies of individual life insurance.

C. Definitions

1. The term "anticipated experience assumption" means an expectation of future experience for a risk factor given available, relevant information pertaining to the assumption being estimated.

2. The term "clearly defined hedging strategy" means a strategy undertaken by a company to manage risks that meet the criteria specified in the applicable requirement.

3. The term "deterministic reserve" means a reserve amount calculated under a defined scenario and a single set of assumptions.

4. The term "industry basic table" means an NAIC-approved industry experience mortality table (without the valuation margin).

5. The term "gross reserve" means the minimum reserve held in the absence of any ceded reinsurance.

6. The term "margin" means an amount included in the assumptions, except when the assumptions are prescribed, used to determine the modeled reserve that incorporates conservatism in the calculated value consistent with the requirements of the various sections of the Valuation Manual. It is intended to provide for estimation error and adverse deviation.

7. The term "model segment" means a group of policies and associated assets that are modeled together to determine the path of net asset earned rates.

8. The term "modeling efficiency technique" shall refer to any technique designed to reduce the complexity or run time of an actuarial model without compromising the accuracy of the results calculated by the model.

   Guidance Note: Examples include, but are not limited to:

   1. Choosing a reduced set of scenarios from a larger set or an alternative set consistent with prescribed models and parameters.

   2. Generating a smaller liability or asset model to represent the full seriatim model using grouping compression techniques, or other similar simplifications.

9. The term "mortality segment" means a subset of policies for which a separate mortality table representing the prudent estimate assumption will be determined.

10. The term "net asset earned rates" means the path of earned rates reflecting the net general account portfolio rate in each projection interval (net of appropriate default costs and investment expenses).

11. The term "net premium reserve" means the amount determined in Section 3.

12. The term "non-guaranteed element" or "NGE" means either: (a) dividends under participating policies or contracts; or (b) other elements affecting life insurance or annuity policyholder/contract holder costs or values that are both established and subject to change at the discretion of the insurer.

13. The term "policy" means an individual life insurance policy included in the scope of these requirements.

14. The term "policyholder efficiency" means the phenomenon that policyholders will act in their best interest with regard to the value of their policy. A policyholder acting with high policyholder efficiency would take actions permitted in their contract which would provide the greatest relative value. Such actions include but are not limited to not lapsing a low value or no value contract, persisting, surrendering, applying additional premium, and exercising loan and partial surrender provisions.

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.

16. The term "Principle-Based Reserve Actuarial Report" or "PBR Actuarial Report" means the document containing supporting information prepared by the company as required by VM-31.

17. The term "prudent estimate assumption" means a risk factor assumption developed by applying a margin to the anticipated experience assumption for that risk factor.

18. The term "reinsurance cash flows" means the amount paid under a reinsurance agreement between a ceding company and an assuming company. Positive reinsurance cash flows shall represent amounts payable from the assuming company to the ceding company; negative reinsurance cash flows shall represent amounts payable from the ceding company to the assuming company.

19. The term "reinsurance aggregate cash flows" means the difference between reinsurance cash flows and reinsurance discrete cash flows, as defined below. An example of reinsurance aggregate cash flows includes experience refunds.

    Guidance Note: If a reinsurance agreement gives rise to reinsurance aggregate cash flows, the company should take care to examine and apply the guidance in Sections 8.A.3 through 8.A.5 with regard to the treatment of such cash flows.

20. The term "reinsurance discrete cash flows" means reinsurance cash flows determined by applying reinsurance terms to an individual covered policy, without reference to the circumstances and events of other policies. Examples of reinsurance discrete cash flows would be proportional sharing of one or more items of revenue or expense associated with an underlying reinsured policy.

21. The term "scenario" means a projected sequence of events used in the cash flow model, such as future interest rates, equity performance, or mortality.

22. The term "scenario reserve" means the amount determined on an aggregated basis for a given scenario that is used as a step in the calculation of the stochastic reserve.

23. A "secondary guarantee" is a guarantee that a policy will remain in force for some period of time (the secondary guarantee period) even if its fund value is exhausted, subject to one or more conditions.

24. The term "seriatim reserve" means the amount determined for a given policy that is used as a step in the calculation of the deterministic reserve.

25. The term "stochastic reserve" means the amount determined in Section 5.

26. The term "stochastic exclusion test" means a test to determine whether a group of policies is required to comply with stochastic modeling requirements.

27. The term "universal life insurance policy" means a life insurance policy where separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality and expense charges are made to the policy. A universal life insurance policy may provide for other credits and charges, such as charges for cost of benefits provided by rider.

28. The term "variable life insurance policy" means a policy that provides for life insurance, the amount or duration of which varies according to the investment experience of any separate account or accounts established and maintained by the insurer as to the policy.

Section 2. Minimum Reserve

A. All policies subject to these requirements shall be included in one of the groups defined by paragraphs 1, 2 or 3. The company may elect to exclude one or more groups of policies from the stochastic reserve calculation and the

deterministic reserve calculation if the exclusion tests determined pursuant to section 6 are passed. The minimum reserve equals the sum of:

1. For the group of policies that pass both the stochastic exclusion and the deterministic exclusion test: the aggregate net premium reserve for those policies.

2. For the group of policies that pass the stochastic exclusion test but do not pass the deterministic exclusion test: the aggregate net premium reserve plus the excess, if any, of the deterministic reserve determined pursuant to Section 4 over the quantity (A-B) where A = the aggregate net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.

3. For the group of policies that fail the stochastic exclusion test, and for the group of policies not subject to the exclusion tests: the aggregate net premium reserve plus the excess, if any, of the greater of the deterministic reserve determined pursuant to Section 4 and the stochastic reserve determined pursuant to Section 5 over the quantity (A-B) where A = the aggregate net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.

B. For purposes of this Section, the aggregate net premium reserve for a group of policies is the sum of the net premium reserve pursuant to Section 3 for each of the policies of the group less any net premium reserve credit for reinsurance ceded pursuant to Section 8.B. for the same group of policies.

C. The minimum reserve for each policy is equal to the net premium reserve for that policy calculated as specified in Section 3 less that policy's portion of any net premium reserve credit for reinsurance ceded as specified in Section 8.B. (the Allocation Net Premium Reserve) plus the policy's allocated portion of any reserve excess defined as: .

For each policy of the group whose reserve is determined according to A.2., that policy's allocated portion of any reserve excess is the Allocation Net Premium Reserve for that policy multiplied by the ratio of the deterministic reserve excess determined by A.2. divided by the aggregate Allocation Net Premium Reserves for that group of policies.

For each policy of the group whose reserve is determined according to A.3., that policy's allocated portion of any reserve excess is the Allocation Net Premium Reserve for that policy multiplied by the ratio of the reserve excess determined by A.3. divided by the aggregate Allocation Net Premium Reserves for that group of policies.

D. If the company elects to perform the stochastic and deterministic exclusion tests in Section 6 pursuant to section 2.B above, then:

1. Stochastic reserves must be calculated for each group of policies that fail the stochastic exclusion test in Section 6.

2. Deterministic reserves must be calculated for each group of policies that fail either the deterministic exclusion or stochastic exclusion tests in Section 6.

3. If a company elects to calculate stochastic reserves for one or more groups of policies, the company is not required to perform the exclusion tests in Section 6 for those policies.

4. A group of policies for which neither deterministic nor stochastic reserves are required or calculated are not principle-based valuation reserves as defined under the Standard Valuation Law.

E. The company may calculate the deterministic reserve and the stochastic reserve as of a date no earlier than three months before the valuation date, using relevant company data, provided an appropriate method is used to adjust those reserves to the valuation date. Company data used for experience studies to determine prudent estimate assumptions are not subject to this three-month limitation.

F. If a company has separate account business, the company shall allocate the minimum reserve between the general and separate accounts subject to the following:

1. The amount allocated to the general account shall not be less than zero and shall include any liability related to contractual guarantees provided by the general account; and

2. The amount allocated to the separate account shall not be less than the sum of the cash surrender values and not be greater than the sum of the account values attributable to the separate account portion of all such contracts.

G. A company may use simplifications, approximations and modeling efficiency techniques to calculate the net premium reserve, the deterministic reserve and/or the stochastic reserve required by this section if the company can demonstrate that the use of such techniques does not understate the reserve by a material amount and the expected value of the reserve calculated using simplifications, approximations and modeling efficiency techniques is not less than the expected value of the reserve calculated that does not use them.

In such case, information shall be available to ensure that a deterministic reserve amount calculated as the total of the seriatim (policy-by-policy, with respect to liability cash flows) reserve calculations produces a reserve not materially different than the deterministic reserve amount calculated using groupings of policies. This does not preclude use of model segmentation for purposes of determining discount rates. VM-31 Section 3.E.3. provides details.

H. The reserves for supplemental benefits and riders shall be calculated consistent with the requirements for "Riders and Supplemental Benefits" in VM-00, Section II.

Section 3. Net Premium Reserve

A. Applicability

1. The net premium reserve for each term policy, universal life insurance with secondary guarantee policy (definitions of products to be included need to be determined) must be determined pursuant to Section 3.

2. Except for policies subject to Section 3.A.1, the net premium reserve shall be determined pursuant to applicable ~~requirements~~ methods in VM-A and VM-C for the basic reserve. The mortality tables to be used are those defined in Section 3.C.1. and in VM-M Section 1.H.

B. For purposes of this Section 3 and Section 6, the following definitions apply:

1. The "fully funded secondary guarantee**"** at any time is:

a. For a shadow account secondary guarantee, the minimum shadow account fund value necessary to fully fund the secondary guarantee for the policy at that time.

b. For a cumulative premium secondary guarantee, the amount of cumulative premiums required to have been paid to that time that would result in no future premium requirements to fully fund the guarantee, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

2. The "actual secondary guarantee**"** at any time is:

a. For a shadow account secondary guarantee, the actual shadow account fund value at that time.

b. For a cumulative premium secondary guarantee, the actual premiums paid to that point in time, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

Drafting Note: This definition as it relates to a cumulative premium product needs a final review.

3. The "level secondary guarantee" at any time is:

a. For a shadow account secondary guarantee, the shadow account fund value at that time assuming payment of the level gross premium determined according to Subsection 3.B.6.c.i.

b. For a cumulative premium secondary guarantee, the amount of cumulative level gross premiums determined according to Section 3.B.6.c.i, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

Guidance Note: The definition of the net premium reserve in subsections 4, 5 and 6 is intended to result in a terminal net premium reserve under the assumption of an annual mode gross premium. The gross premium referenced should be the gross premium for the policy assuming an annual premium mode. The reported reserve as of any valuation date should reflect the actual premium mode for the policy and the actual valuation date relative to the policy issue date either directly or through adjusting accounting entries.

4. For all policies other than universal life policies, on any valuation date the net premium reserve shall be equal to the actuarial present value of future benefits less the actuarial present value of future annual valuation net premiums as follows:

   a. The annual valuation net premiums shall be a uniform percent of the respective adjusted gross premiums, described in Section 3.B.4.b, such that at issue the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits plus an amount equal to $2.50 per $1,000 of insurance for the first policy year only.

      For policies subject to the shock lapse provisions of Section 3.C.3.b.iii, valuation net premiums for policy years after the shock lapse shall be limited and may result in two uniform percentages, one applicable to policy years prior to the shock lapse and one applicable to policy years following the shock lapse. For these policies, these percentages shall be determined as follows:

      i. Compute the actuarial present value of benefits for policy years following the shock lapse.

      ii. Compute the actuarial present value of valuation net premiums for policy years following the shock lapse.

      iii. If ii/i is greater than 135%, reduce the net valuation premiums in ii uniformly to produce a ratio of ii/i of 135%.

      iv. If the application of iii produces an adjustment to the net valuation premiums following the shock lapse, increase the net valuation premiums for policy years prior to the shock lapse by a uniform percentage such that at issue the actuarial present value of future valuation net premiums equals the actuarial present value of future benefits plus $2.50 per $1,000 of insurance for the first policy year only.

   b. Adjusted gross premiums shall be determined as follows:

      i. The adjusted gross premium for the first policy year shall be set at zero.

      ii. The adjusted gross premium for any year from the second through fifth policy year shall be set at 90% of the corresponding gross premium for that policy year.

      iii. The adjusted gross premium for any year after the fifth policy year shall be set equal to the corresponding gross premium for that policy year.

   c. The gross premium in any policy year is the maximum guaranteed gross premium for that policy year.

   d. Actuarial present values are calculated using the interest, mortality, and lapse assumptions prescribed in Section 3.C.

5. For any universal life policy, a reserve shall be determined by the policy features and guarantees of the policy without considering any secondary guarantee provisions. The net premium reserve shall be calculated as follows:

   a. Determine the level gross premium at issue, assuming payments are made each year for which premiums are permitted to be paid, such period defined as “s” in this Subsection, that would keep the policy in force

for the entire period coverage is to be provided based on the policy guarantees of mortality, interest and expenses.

b. Using the level gross premium from Section 3.B.5.a, determine the value of the expense allowance components for the policy at issue as x_1, $y_{2\text{-}5}$, and z defined below.

x_1 = a first year expense equal to the level gross premium at issue

$y_{2\text{-}5}$ = an expense equal to 10% of the level gross premium and applied in each year from the second through fifth policy year

z_1 = a first year expense of $2.50 per $1,000 of insurance issued

The expense allowance, E_{x+t}, shall be amortized as follows over the period for which premiums are permitted to be paid:

$E_{x+t} = VNPR \bullet \ddot{a}_{x+t|s-t|}\left[(x_1 + z_1)/\ddot{a}_{x|s|} + y_{2-5} \bullet C_{x+t}\right]$ for t < s

$= 0$ for t ≥ s

Where:

$VNPR$ = Valuation Net Premium Ratio from 3.B.5.c.

$C_{x+t} = 0$ when t = 1

$= \sum_{w=1}^{t-1}\left(1/\ddot{a}_{x+w|s-w|}\right)$ when 2 ≤ t ≤ 5

$= C_{x+5}$ when t > 5

c. Determine the annual valuation net premiums as that uniform percentage (the valuation net premium ratio) of the respective gross premiums, such that at issue the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits.

d. For a policy issued at age *x,* on any valuation date *t,* the net premium reserve shall equal:

$m_{x+t} \bullet r_{x+t}$ where:

i. m_{x+t} = the actuarial present value of future benefits less the actuarial present value of future valuation net premiums and less the unamortized expense allowance for the policy, E_{x+t} ,

ii. r_{x+t} = the ratio e_{x+t}/f_{x+t} , but not greater than 1, with (e_{x+t}) and (f_{x+t}) defined as below:

= the actual policy fund value on the valuation date *t*

f_{x+t} = The policy fund value on the valuation date *t* is that amount which, together with the payment of the future level gross premiums determined in subsection 3.B.5.a above, keeps the policy in force for the entire period coverage is to be provided, based on the policy guarantees of mortality, interest and expenses.

e. The future benefits used in determining the value of *m* shall be based on the policy fund value on the valuation date *t* together with the future payment of the level gross premiums determined in subsection 3.B.5.a above, and assuming the policy guarantees of mortality, interest and expenses.

f. The values of $\ddot{a}$ are determined using the net premium reserve interest, mortality and lapse assumptions applicable on the valuation date.

g. Actuarial present values referenced in this subsection 3.B.5 are calculated using the interest, mortality, and lapse assumptions prescribed in Subsection C of this section.

6. For any universal life policy for which the longest secondary guarantee period is more than five years, or if less than five years, specified premium for the secondary guarantee period is less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables as defined in VM-20 Section 3.C and VM-M, or the applicable valuation interest rate; and the initial surrender charge is less than 100% of the first year annualized specified premium for the secondary guarantee period, during the secondary guarantee period the net premium reserve shall be the greater of the reserve amount determined according to subsection 3.B.5, assuming the policy has no secondary guarantees, and the reserve amount for the policy determined according to the methodology and requirements subsections 3.B.6.b through 3.B.6.e below.

a. After the expiration of the secondary guarantee period, the net premium reserve shall be the net premium reserve determined according to subsection 3.B.5 only.

b. If the policy has multiple secondary guarantees, the net premium reserve shall be calculated as below for the secondary guarantee that provides the longest period for which the policy can remain in force under the provisions of the secondary guarantee, such period defined as "n" in this Subsection. The resulting net premium reserve shall be used in the comparison with the net premium reserve calculated in accordance with Subsection 3.B.5.

c. As of the policy issue date:

i. Determine the level gross premium at issue, assuming payments are made each year for which premiums are permitted to be paid, such period defined as "v" in this Subsection that would keep the policy in force to the end of the secondary guarantee period, based on the secondary guarantee assumptions as to mortality, interest and expenses. In no event shall "v" be greater than "n" for purposes of the net premium reserve calculated in this Subsection.

ii. Using the level gross premium from subsection 3.B.6.c.i above, determine the value of the expense allowance components for the policy at issue as x_1, y_{2-5}, and z_1 defined below.

x_1= a first year expense equal to the level gross premium at issue

y_{2-5}= an expense equal to 10% of the level gross premium and applied in each year from the second through fifth policy year

z_1= a first year expense of $2.50 per $1,000 of insurance issued

The expense allowance, E_{x-t}, shall be amortized as follows over the period for which premium are permitted to be paid:

$$E_{x+t} = VNPR * \ddot{a}_{x+t\overline{v-t}|}\left[(x_1 + z_1)/\ddot{a}_{xv\overline{|}} + y_{2-5} \bullet C_{x+t}\right] \quad \text{for } t < v$$

$$= 0 \quad \text{for } t \geq v$$

Where:

VNPR = Valuation Net Premium Ratio from 3.B.6.c.iii

$C_{x+t} = 0$ when t = 1

$=\sum_{w=1}^{t-1}(1/\ddot{a}_{x+w\overline{w-w}|})$ when $2 \leq t \leq 5$

$= C_{x+5}$ when t>5

iii. Determine the annual valuation net premiums at issue as that uniform percentage (the valuation net premium ratio) of the respective gross premiums such that at issue and over the secondary guarantee period the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits. The valuation net premium ratio determined shall not change for the policy.

d. After the policy issue date, on each future valuation date, *t*, the net premium reserve shall be determined as follows:

i. Determination should be made of the amount of actual shadow account as of the valuation date, ASG_{x+t}, as defined in 3.B.2.

ii. As of the valuation date for the policy being valued, for policies utilizing shadow accounts, determine the minimum amount of shadow account required to fully fund the guarantee, $FFSG_{x+t}$, as defined in 3.B.1. For any policy for which the secondary guarantee cannot be fully funded in advance, solve for the minimum sum of any possible excess funding (either the amount in the shadow account or excess cumulative premium payments depending on the product design) and the present value of future premiums (using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves) that would fully fund the guarantee. The result from i above should be divided by this number, with the resulting ratio capped at 1.00. The ratio is intended to measure the level of prefunding for a secondary guarantee which is used to establish reserves. Assumptions within the numerator and denominator of the ratio therefore must be consistent in order to appropriately reflect the level of prefunding. As used here, "assumptions" include any factor or value, whether assumed or known, which is used to calculate the numerator or denominator of the ratio.

iii. Compute the net single premium (NSP_{x+t}) on the valuation date for the coverage provided by the secondary guarantee for the remainder of the secondary guarantee period, using the interest, lapse and mortality assumptions prescribed in Subsection C of this section. The net single premium shall include consideration for death benefits only.

iv. The net premium reserve for an insured age *x* at issue at time *t* shall be according to the formula below:

$$Min\left[\frac{ASG_{x+t}}{FFSG_{x+t}}, 1\right] \bullet NSP_{x+t} - E_{x+t}$$

e. Actuarial present values referenced in this subsection B.6 are calculated using the interest, mortality and lapse assumptions prescribed in Subsection C of this section.

7. The actuarial present value of future benefits equals the present value of future benefits including, but not limited to, death, endowment (including endowments intermediate to the term of coverage), and cash surrender benefits. Future benefits are before reinsurance and before netting the repayment of any policy loans.

C. Net Premium Reserve Assumptions

1. Mortality Rates

a. Except as indicated in subsection 3.C.1.b, and subject to ~~subsection 3.C.1.e~~ the conditions outlined for reserves in VM-A-814 and A-815 in Appendix A of this manual, the mortality standard used in determining the present values described in Subsection B of this Section shall be the 2001 Commissioners Standard Ordinary (CSO) Mortality Table as defined in VM-M Section 1.G. of this manual. ~~The 2001 CSO Mortality Table means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the *Proceedings of the NAIC (2nd Quarter 2002)* and supplemented by the 2001 CSO Preferred Class Structure Mortality Table. Unless the context indicates otherwise, the 2001 CSO Mortality Table includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-~~

~~birthday and age-last-birthday bases of the mortality table. The 2001 CSO Preferred Class Structure Mortality Table means mortality tables with separate rates of mortality for Super Preferred Nonsmokers, Preferred Nonsmokers, Residual Standard Nonsmokers, Preferred Smokers, and Residual Standard Smoker splits of the 2001 CSO Nonsmoker and Smoker tables as adopted by the NAIC at the September 2006 national meeting and published in the *NAIC Proceedings (3rd Quarter 2006)*. Unless the context indicates otherwise, the 2001 CSO Preferred Class Structure Mortality Table includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables and the gender composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table. *NAIC Proceedings (3rd Quarter 2006).*~~

b. Subject to the conditions defined in 3.C.1.c., the 2017 Commissioner's Standard Ordinary Mortality Tables as defined in VM-M Section 1.H. is required as the valuation standard for Ordinary Life policies issued on or after January 1, 2020 and subject to this Section {intent is Section 3 of VM-20}. A company may elect to apply this table to determine minimum reserve standards to one or more plans of insurance for policies issued on or after January 1, 2017.

c. Conditions for application of the 2017 CSO:

(1) For each plan of insurance with separate rates for smokers and nonsmokers, an insurer may use:

(a) Composite mortality tables to determine minimum reserve liabilities; ~~-~~or

(b) Smoker and nonsmoker mortality to determine minimum reserve liabilities if nonforfeiture values are also determined using smoker and nonsmoker mortality.

(2) For plans of insurance without separate rates for smokers and nonsmokers, the composite mortality tables shall be used.

(3) For the purpose of determining minimum reserve values and amounts of paid-up nonforfeiture benefits, the 2017 CSO Mortality Table may, at the option of the company for each plan of insurance, be used in its ultimate or select and ultimate form.

(4) Gender-Blended Tables shall apply in the following circumstances:

For any ordinary life insurance policy delivered or issued for delivery that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a mortality table that is a blend of the 2017 CSO Mortality Table (M) and the 2017 CSO Mortality Table (F) may, at the option of the company for each plan of insurance, be ~~substituted for the 2001 CSO Mortality Table for~~ use used in determining minimum reserves.~~cash surrender values and amounts of paid-up nonforfeiture benefits.~~

d. At the election of the company, for any one or more specified plans of insurance and subject to satisfying the conditions stated in 3.C.1.e., the 2017 CSO Preferred Class Structure Mortality Table may be substituted in place of the 2017 CSO Smoker or Nonsmoker Mortality Table as the minimum valuation standard for policies issued on or after January 1, 2017.

e. Conditions for preferred structure tables:

(1) For each plan of insurance with separate rates for preferred and standard nonsmoker lives, an insurer may use the super preferred nonsmoker, preferred nonsmoker, and residual standard nonsmoker tables to substitute for the nonsmoker mortality table found in the 2017 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, except for business valued under the residual standard nonsmoker table, the appointed actuary shall certify that:

(a) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

(b) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date

Comment [A1]: The Academy has requested that reviewers consider this paragraph to see if the wording fully captures the intent, which was to exempt pre-need and similar products that are eligible to us a separate valuation basis.

for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

(2) For each plan of insurance with separate rates for preferred and standard smoker lives, an insurer may use the preferred smoker and residual standard smoker tables to substitute for the smoker mortality table found in the 2017 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, for business valued under the preferred smoker table, the appointed actuary shall certify that:

(a) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the preferred smoker valuation basic table corresponding to the valuation table being used for that class.

~~(a)~~(b) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the preferred smoker valuation basic table.

(3) Selection of the proper set of mortality rates when a company chooses to use a permitted preferred class structure mortality table shall be subject to actuarial guideline XLII and applied to the 2017 CSO consistently with the 2001 CSO.

Comment [A2]: Revised 8/13

~~**Drafting Note:** The company shall determine the appropriate table from the Preferred Structure Mortality Tables based on the anticipated mortality for the class of policies being valued. Need to bring in the requirements of Model 815 and AG 42.~~ Drafting Note: Comments are requested regarding placement of reference to AG 42.

Guidance Note: The Valuation Manual can be updated by the NAIC to define a new valuation table. Because of the various implications to systems, form filings, and related issues (such as product tax issues), lead time is needed to implement new requirements without market disruption. It is recommended that this transition be for a period of about 4.5 years—that is, that the table be adopted by July 1 of a given year, that it be permitted to be used starting Jan. 1 of the second following calendar year, that it be optional until Jan. 1 of the fifth following calendar year, thereafter mandatory. It is further intended that the adoption of such tables would apply to all business issued since the adoption of this Valuation Manual. The details of how to implement any unlocking of mortality tables will need to be addressed in the future.

2. Interest Rates

Drafting Note: This section describing the determination of the "calendar year net premium reserve interest rate" is intended to communicate that, unlike the "unlocking" of the net premium reserve mortality and lapse assumptions, the interest rate used in the net premium reserve calculation for a block of policies issued in a particular calendar year does not change for the duration of each of the policies in that issue year block.

a. For net premium reserve amounts calculated according to:

i. Section 3.B.5 for policies and riders for which nonforfeiture benefits are provided; or

ii. Section 3.B.6.

The calendar year net premium reserve interest rate *I* shall be determined according to this subsection 3.C.2.a and subsections 3.C.2.b and 3.C.2.c below and the results rounded to the nearer one-quarter of one percent (1/4 of 1%). This rate shall be used in determining the present values described in Subsection B of this Section for all policies issued in the calendar year next following its determination.

$$I = .03 + W * (R_1 - .03) + (W/2) * (R_2 - .09)$$

Where: R_1 is the lesser of R and .09

R_2 is the greater of R and .09

R is the reference interest rate defined in Subsection 2.b. below

W is the weighting factor for a policy, as defined in Subsection 2.c. below

However, if the calendar year net premium reserve interest rate I in any calendar year determined without reference to this sentence differs from the corresponding actual rate for the immediately preceding calendar year by less than one-half of one percent (1/2 of 1%), the calendar year net premium reserve interest rate shall be set equal to the corresponding actual rate for the immediately preceding calendar year.

b. The reference interest rate R for a calendar year shall equal the lesser of the average over a period of 36 months and the average over a period of l2 months, ending on June 30 of the calendar year preceding the year of issue, of the monthly average of the composite yield on seasoned corporate bonds, as published by Moody's Investors Service, Inc.

c. The weighting factor W for a policy shall be determined from the table below:

Guarantee Duration (Years)	Weighting Factor
10 or less	.50
More than 10 but not more than 20	.45
More than 20	.35

The guarantee duration for the coverage guarantee is the maximum number of years the life insurance can remain in force on the basis guaranteed in the policy or under options to convert to plans of life insurance with premium rates or nonforfeiture values or both which are guaranteed in the original policy.

d. For reserve amounts calculated according to:

i. Section 3.B.5 of this Section for policies and riders for which no nonforfeiture benefits are provided; or

ii. Section 3.B.7 of this Section.

The calendar year net premium reserve interest rate shall be calculated by increasing the rate determined according to Subsections 3.C.2.a through 3.C.2.c above by 1.5%, but in no event greater than 125% of the rate determined according to Subsection 3.C.2.a through 3.C.2.c above rounded to the nearer one-quarter of one percent (1/4 of 1%).

Drafting Note: If a policy contains multiple coverage guarantees and each coverage guarantee stream is valued separately, it may be important to define which reserve interest rate(s) should be used for reporting and analysis purposes.

3. Lapse Rates

a. For policies other than universal life policies or riders which provide nonforfeiture values, universal life policies not containing a secondary guarantee, and universal life policies for which the longest secondary guarantee period is five years or less, the lapse rates used in determining the present values described in subsection 3.B shall be 0% per year during the premium paying period and 0% per year thereafter.

b. For policies other than universal life policies or riders which provide no nonforfeiture values (i.e., term policies), the annual lapse rates used to determine the present values described in subsection 3.B shall vary by level premium period as stated below:

i. 10% per year during any level premium period of less than five years, except as noted in iii.

ii. 6% per year during any level premium period of five or more years, except as noted in iii.

iii. 10% per year during any premium paying period after an initial level premium period of less than five years.

iv. For policies or riders having a level premium of five years or longer, the lapse rate for the first year of the renewal premium period shall be determined based on the length of the current and renewal premium periods and the percent increase in the gross premium as shown in the table below instead of what would otherwise apply from i or ii above.

Current Premium Yrs.	Length of Renewal Prem.	Percent increase in gross premium per	Rate for first Yr. of Renewal
≤1	ART	Any	10%
1<PP≤5	ART	Any	50%
1<PP≤5	1<PP≤5	Any	25%
5<PP≤10	ART	< 400%	70%
5<PP≤10	ART	Over 400%	80%
5<PP≤10	1<PP≤5	Any	50%
5<PP≤10	5<PP≤10	Any	25%
10<PP	ART	< 400%	70%
10<PP	ART	Over 400%	80%
10<PP	1<PP≤5	Any	70%
10<PP	5<PP≤10	Any	50%
10<PP	10<PP	Any	50%

c. For universal life policies, for which the longest secondary guarantee period is more than five years, the lapse rate, L_{x+t}, used to determine the present values described in Subsection B at time *t* for an insured age *x* at issue shall be determined as follow:

i. Determine the ratio R_{x+t} where:

$$R_{x+t} = [FFSG_{x+t} - ASG_{x+t}] / [FFSG_{x+t} - LSG_{x+t}] \text{ but not} > 1$$

Where:

$FFSG_{x+t}$ = the fully funded secondary guarantee at time *t* for the insured age *x* at issue

ASG_{x+t} = the actual secondary guarantee at time *t* for the insured age *x* at issue

LSG_{x+t} = the level secondary guarantee at time *t* for the insured age *x* at issue

ii. The lapse rate for the policy for durations $t+1$ and later shall be set equal to:

$$L_{x+t} = R_{x+t} \bullet 0.01 + (1 - R_{x+t}) \bullet 0.005 \bullet r_{x+t}$$

Where r_{x+t} is the ratio determined in Subsection 3.B.5.d.ii.

D. Net Premium Reserve Calculation and Cash Surrender Value Floor

1. For policies other than universal life policies, the net premium reserve shall not be less than the greater of:

a. The cost of insurance to the next paid to date. The cost of insurance for this purpose shall be determined using the mortality tables for the policy prescribed in subsection 3.C; or

b. The policy cash surrender value, calculated as of the valuation date and in a manner that is consistent with that used in calculating the net premium reserve on the valuation date.

Drafting Note: It may be appropriate to consider potential simplifications for the net premium reserve for YRT reinsurance assumed. The unearned annual tabular cost of insurance ("interpolated C_X") is one potential option to examine.

2. For a universal life policy, the net premium reserve shall not be less than the greater of:

a. The amount needed to cover the cost of insurance to the next processing date on which cost of insurance charges are deducted with respect to the policy. The cost of insurance for this purpose shall be determined using the mortality tables for the policy prescribed in subsection 3.B; or

b. The policy cash surrender value, calculated as of the valuation date and in a manner that is consistent with that used in calculating the net premium reserve on the valuation date.

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 using the method described in either Subsection A or Subsection B of this section .

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 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 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.F.3.

Guidance Note: When 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.F.3;

Guidance Note: Future net policy loan cash flows include: policy loan interest paid in cash plus repayments of policy loan 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), less additional policy loan principal.

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.

B. Calculate the deterministic reserve as a – b, where

a = the aggregate annual statement value of those starting assets which, when projected along with all premium and investment income, result in the liquidation of all projected future benefits and expenses by the end of the projection horizon. Under this alternative, the following considerations apply:

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

2. The requirements for future benefits and premiums in Section 4.A apply as well to the calculation of the deterministic reserve under this subsection.

b = that portion of the PIMR amount allocated under Section 7.

C. Future net reinsurance aggregate cash flows shall be allocated as follows:

1. Future net reinsurance aggregate cash flows shall be allocated to each policy reinsured under a given reinsurance agreement in the same proportion as the ratio of each policy's present value of future net reinsurance discrete cash flows to total present value of future net reinsurance discrete cash flows under the reinsurance agreement.

2. Future net reinsurance aggregate cash flows allocated to a group of policies is equal to the sum of future net reinsurance aggregate cash flows allocated to each policy in the group.

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).

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 on a standalone basis, and sum together those amounts for each subgroup to determine the total stochastic reserve.

Section 6. Stochastic and Deterministic Exclusion Tests

A company meeting all of the following conditions may file a statement of exemption for the current calendar year with their domestic commissioner prior to July 1 of that year certifying that these conditions are met based on premiums and other values from the prior calendar year financial statements and that any ULSG business issued since the operative date of the Valuation Manual meets the definition for non-material secondary guarantee. The Commissioner may reject such statement prior to September 1 and require the company to follow the requirements of VM-20 for the Ordinary Life policies. Otherwise, the minimum reserve requirements for its Ordinary Life policies are those pursuant to applicable methods require~~dments~~ in VM-A and VM-C, using the mortality as defined in Section 3.C.1 and VM-M Section 1.H. Conditions:

1. The company is a 'small company' for this purpose if it has less than $300 million of ordinary life premiums[1] and, if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums[1] of less than $600 million,

And

2. The company reported Total Adjusted Capital of at least 450% of the authorized control level RBC in the most recent RBC report, and the appointed actuary has provided an unqualified opinion on the reserves,

And

3. Any ULSG policies issued or assumed by the company after the operative date of the valuation manual meet the definition of a non-material secondary guarantee ULSG product.

A. Stochastic Exclusion Test

   1. Requirements to pass the stochastic exclusion test:

      a. Groups of policies pass the stochastic exclusion test if:

         i. Annually and within 12 months before the valuation date the company demonstrates that the groups of policies pass the stochastic exclusion ratio test defined in Section 6.A.2;

[1] Premiums are measured as direct plus reinsurance assumed from an unaffiliated company from the prior calendar year annual statement.

ii. In the first year and at least once every three calendar years thereafter the company provides a demonstration in the PBR Actuarial report as specified in Section 6.A.3; or

iii. For groups of policies other than variable life or universal life with a secondary guarantee, in the first year and at least every third calendar year thereafter the company provides a certification by a qualified actuary that the group of policies is not subject to material interest rate risk or asset return volatility risk (i.e., the risk on non-fixed-income investments having substantial volatility of returns such as common stocks and real estate investments). The company shall provide the certification and documentation supporting the certification to the commissioner upon request.

Guidance Note: The qualified actuary should develop documentation to support the actuarial certification that presents their analysis clearly and in detail sufficient for another actuary to understand the analysis and reasons for the actuary's conclusion that the group of policies is not subject to material interest rate risk or asset return volatility risk. Examples of methods a qualified actuary could use to support the actuarial certification include, but are not limited to:

1. A demonstration that reserves for the group of policies calculated according to Sections 5–9 of VM-05, VM-A and VM-C are at least as great as the assets required to support the group of policies using the company's cash flow testing model under each of the 16 scenarios identified in Section 6 or alternatively each of the New York 7 scenarios.

2. A demonstration that the group of policies passed the stochastic exclusion ratio test within 36 months prior to the valuation date and the company has not had a material change in its interest rate risk.

3. A qualitative risk assessment of the group of policies that concludes that the group of policies does not have material interest rate risk or asset return volatility. Such assessment would include an analysis of product guarantees, the company's non-guaranteed element policy, assets backing the group of policies and the company's investment strategy.

b. A company may not exclude a group of policies for which there is one or more clearly defined hedging strategies from stochastic reserve requirements.

2. Stochastic Exclusion Ratio Test

a. In order to exclude a group of policies from the stochastic reserve requirements using the method allowed under Section 6.A.1.a, a company shall demonstrate that the ratio of (b-a)/c is less than 6.0% where:

i. a = the adjusted deterministic reserve described in subsection 6.A.2.b.i using the baseline economic scenario described in Appendix 1.

ii. b = the largest adjusted deterministic reserve described in subsection 6.A.2.b.i under any of the other 15 economic scenarios described in Appendix 1.

iii. c = an amount calculated from the baseline economic scenario described in Appendix 1 that represents the present value of benefits for the policies, adjusted for reinsurance by subtracting ceded benefits. For clarity, premium, ceded premium, expense, reinsurance expense allowance, modified coinsurance reserve adjustment and reinsurance experience refund cash flows shall not be considered "benefits," but items such as death benefits, surrender or withdrawal benefits and policyholder dividends shall be. For this purpose, the company shall use the benefits cash flows from the calculation of quantity "a," and calculate the present value of those cash flows using the same path of discount rates as used for "a."

Drafting Note: Empirical testing of the reinsurance adjustment to "iii" should encompass its impact in the case of YRT reinsurance as well as consistency of results among similar coinsurance, coinsurance with funds withheld, and modified coinsurance forms. A Guidance Note may prove necessary to address further judgment in the case of YRT.

b. In calculating the ratio in item a above, the company:

i. Shall calculate an adjusted deterministic reserve for the group of policies for each of the 16 scenarios that is equal to the deterministic reserve defined in Section 4.A, but with the following differences:

1. Using anticipated experience assumptions with no margins;

2. Using the interest rates and equity return assumptions specific to each scenario; and

3. Using net asset earned rates specific to each scenario to discount the cash flows.

(a) Shall use the most current available baseline economic scenario and the 15 other economic scenarios published by the NAIC. The methodology for creating these scenarios can be found in Appendix 1 of the 20.

(b) Shall use anticipated experience assumptions within each scenario that are dynamically adjusted as appropriate for consistency with each tested scenario.

(c) May not group together contract types with significantly different risk profiles for purposes of calculating this ratio.

(d) Mortality improvement beyond the projection start date may not be reflected in anticipated experience assumptions for the purpose of the calculating the stochastic exclusion ratio.

ii. Alternatively, a company may use gross premium reserves developed from the cash flows from the company's Asset Adequacy Analysis models in lieu of the deterministic reserve. In this case, the company may use the experience assumptions of the company's cash flow analysis as the anticipated experience assumptions. The interest rates and discount rates will be those defined in b.i.2. and b.i.3. above.

3. Stochastic Exclusion Demonstration Test

a. In order to exclude a group of policies from the stochastic reserve requirements using the method as allowed under Section 6.A.1.a.ii above, the company must provide a demonstration in the PBR Actuarial Report in the first year and at least once every three calendar years thereafter that complies with the following:

i. The demonstration shall provide a reasonable assurance that if the stochastic reserve was calculated on a standalone basis for the group of policies subject to the stochastic reserve exclusion, the minimum reserve for those groups of policies would not increase. The demonstration shall take into account whether changing conditions over the current and two subsequent calendar years would be likely to change the conclusion to exclude the group of policies from the stochastic reserve requirements.

ii. If, as of the end of any calendar year, the company determines the minimum reserve for the group of policies no longer adequately provides for all material risks, the exclusion shall be discontinued and the company fails the stochastic exclusion test for those policies.

iii. The demonstration may be based on analysis from a date that proceeds the initial or subsequent exclusion period.

iv. The demonstration shall provide an effective evaluation of the residual risk exposure remaining after risk mitigation techniques such as derivative programs and reinsurance.

b. The company may use one of the following or another method acceptable to the commissioner to demonstrate compliance with subsection 6.A.3.a:

i. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the stochastic reserve calculated on a standalone basis, where:

A = the deterministic reserve, and

B = the net premium reserve less any associated due and deferred premium asset.

ii. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the scenario reserve that results from each of a sufficient number of adverse deterministic scenarios, where:

A = the deterministic reserve, and
B = the net premium reserve less any associated due and deferred premium asset.

iii. Demonstrate that the greater of [the quantity A and the quantity B] is greater than the stochastic reserve calculated on a standalone basis, but using a representative sample of policies in the stochastic reserve calculations, where:

A = the deterministic reserve, and
B = the net premium reserve less any associated due and deferred premium asset.

iv. Demonstrate that any risk characteristics that would otherwise cause the stochastic reserve calculated on a standalone basis to exceed greater of the deterministic reserve and the net premium reserve, less any associated due and deferred premium asset, are not present or have been substantially eliminated through actions such as hedging, investment strategy, reinsurance, or passing the risk on to the policyholder by contract provision.

B. Deterministic Exclusion Test

1. A group of universal life policies with a secondary guarantee that does not meet the definition of a 'non-material secondary guarantee' or a group of policies which is not excluded from the stochastic reserve requirement is deemed to not pass the deterministic reserve exclusion test and the deterministic reserve must be computed for this group of policies.

2. Except as provided in subsection 6.B.1, a group of policies passes the deterministic reserve exclusion test if the company demonstrates that the sum of the valuation net premiums for all future years for the group of policies, determined according to paragraph 5 below, is less than the sum of the corresponding guaranteed gross premiums for such policies. The test shall be determined on a direct or assumed basis.

3. A company may not group together policies of different contract types with significantly different risk profiles for purposes of the calculation in subsection 6.B.2.

4. If a group of policies being tested is no longer adding new issues, and the test has been passed for three consecutive years, the group passes until determined otherwise. For this group, the test must be computed at least once each five years going forward.

5. For purposes of determining the valuation net premiums used in the demonstration in subsection 6.B.2:

a. If pursuant to Section 2 the net premium reserve is the minimum reserve required under Section 2.A of the Standard Valuation Law for policies issued prior to the operative date of the Valuation Manual, the valuation net premiums are determined according to those minimum reserve requirements;

b. If the net premium reserve is determined according to Section 3.A.1, the lapse rates assumed for all durations are 0%;

c. For policies with guaranteed gross premium patterns that subject the policy to shock lapses, as defined in Section 3.C.3.b.iii, the valuation net premiums comparison to the guaranteed gross premiums indicated in paragraph 2 shall be performed considering only the initial premium period;

d. If the anticipated mortality for the group of policies exceeds the valuation mortality, then the company shall substitute the anticipated mortality to determine the net premium. For this purpose, mortality shall be measured as the present value of future death claims discounted at the valuation interest rate used for the net premium reserve.

e. The guaranteed gross premium is defined as:

   i. For universal life policies, the guaranteed gross premium shall be the premium specified in the contract, or if no premium is specified, the level annual gross premium at issue that would keep the policy in force for the entire period coverage is to be provided based on the policy guarantees of mortality, interest and expenses; and

   ii. For policies other than universal life policies, the guaranteed gross premium shall be the guaranteed premium specified in the contract.

Amendment Proposal for the

Election of the 2017 CSO Table for Companies Using

Current Reserve Formulas During the Three-year Transition Period

Exposed for comment through September 17, 2015

Send comments to Reggie Mazyck

(RMazyck@NAIC.ORG)

VALUATION MANUAL – VM-00

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   John Bruins, ACLI, additional issue for the adoption of the 2017 CSO

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-00 of the Valuation Manual adopted June 18, 2015

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.)

   See attached pages

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

   This change would allow the election of the 2017 CSO as the mortality table by a company that has elected to use the PBR transition to remain with the current reserve formulas.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

W:\National Meetings\2010\...\TF\LHA\

VALUATION MANUAL – VM-00

ITEM

VALUATION MANUAL – VM-00

I. INTRODUCTION

AUTHORITY AND APPLICABILITY

The Valuation Manual sets forth the minimum reserve and related requirements for jurisdictions where the Standard Valuation Law, as amended by the NAIC in 2009, or legislation including substantially similar terms and provisions has been enacted by jurisdictions, and this Valuation Manual (VM) is operative. The NAIC Model Standard Valuation Law ("Standard Valuation Law" or "SVL") is provided in VM-05 of this Valuation Manual. The reserve requirements in the Valuation Manual satisfy the minimum valuation requirements of the Standard Valuation Law.

Requirements in the Valuation Manual are applicable to life insurance contracts, accident and health insurance contracts, and deposit-type contracts as provided in the Valuation Manual. These contracts include the meaning provided by Statutory Statement of Accounting Principle (SSAP) 50 as found in the NAIC *Accounting Practices and Procedures Manual* (APPM). Annuity contracts are therefore included within the term life insurance contracts unless specifically indicated otherwise in this Valuation Manual.

Minimum reserve requirements are provided in this Valuation Manual for contracts issued on or after the Valuation Manual operative date of XXXXX Other requirements are applicable as provided pursuant to the SVL and this Valuation Manual.

BACKGROUND

As insurance products have increased in their complexity, and as companies have developed new and innovative product designs that change their risk profile, the need to develop new valuation methodologies or revisions to existing requirements to address these changes has led to the development of the Valuation Manual. In addition, the Valuation Manual addresses the need to develop a valuation standard that enhances uniformity among the principle-based valuation requirements across states and insurance departments. Finally, the Valuation Manual defines a process to facilitate future changes in valuation requirements on a more uniform, timely and efficient basis.

The goals of the National Association of Insurance Commissioners (NAIC) in developing the Valuation Manual are:

1. To consolidate into one document the minimum reserve requirements for life insurance contracts, accident and health insurance contracts, and deposit-type contracts pursuant to the SVL, including those products subject to principle-based valuation requirements and those not subject to principle-based valuation requirements.

2. To promote uniformity among states' valuation requirements.

3. To provide for an efficient, consistent and timely process to update valuation requirements as the need arises.

4. To mandate and facilitate the specific reporting requirements of experience data.

5. To enhance industry compliance with the 2009 SVL and subsequent revisions,as adopted in various states.

DESCRIPTION OF VALUATION MANUAL

The Valuation Manual contains five sections which provide requirements covered in Authority and Applicability above, and which discuss principles and concepts underlying these requirements.

1. Section I is an introductory section that includes the general concepts underlying the reserve requirements in the Valuation Manual.

2. Section II summarizes the minimum reserve requirements which apply to a product or type of product, including which products or categories of products are subject to principle-based valuation requirements and documentation. As minimum reserve requirements are developed for various products or categories of products, those requirements will be incorporated into this section. The applicability of the minimum reserve requirements to particular products will be clarified in the appropriate subsection. For example, the minimum reserve requirements that apply to a life insurance product will be identified in the subsection addressing life insurance reserve requirements.

3. Section III sets forth the requirements for the actuarial opinion and memorandum and the principle-based report.

4. Section IV sets forth the experience reporting requirements.

5. Section V contains Valuation Manual minimum standards. These standards contain the specific requirements that are referenced in Sections II – IV.

OPERATIVE DATE OF VALUATION MANUAL

The requirements in the Valuation Manual become operative pursuant to Section 11 of the SVL.

PBR REVIEW AND UPDATING PROCESS

A well-conceived and designed Principle-Based Reserve (PBR) Review and Updating Process is needed to ensure ongoing evaluation of the effectiveness of the PBR methodology, including prescribed assumptions defined in this Manual. This process will involve and provide ongoing feedback to regulators and interested parties, for the purpose of updating, improving, enhancing and modifying the PBR reserve requirements. These changes are necessary due to, for example, making adjustments as appropriate to margins for conservatism, future improvements in cash flow modeling techniques, future development of new policy benefits and guarantees, future changes in assumptions due to emerging experience, improved methods to assess risk, etc.

A key element of the PBR Review and Updating Process is to provide support for state insurance regulators regarding the necessary expertise, resources, data and tools to effectively review PBR models and reporting required in the Valuation Manual for products subject to PBR requirements.

Goals for the PBR Review and Updating Process include achieving consistency in regulatory requirements among states and assessing and making changes as appropriate.

PROCESS FOR UPDATING VALUATION MANUAL

TASK FORCE PROCEDURES

The NAIC is responsible for the process of updating the Valuation Manual. The Life Actuarial (A) Task Force (LATF) is primarily charged with maintenance of the Valuation Manual for adoption by the NAIC Plenary. LATF will coordinate with the Health Actuarial (B) Task Force (HATF), the Statutory Accounting Principles (E) Working Group (SAPWG), and other NAIC groups as necessary when considering changes. HATF will be primarily charged with developing and maintaining the health insurance sections of the Valuation Manual, with approval by the Health Insurance and Managed Care (B) Committee. However all changes to the Valuation Manual, including changes with respect to health insurance, must also be reviewed by LATF as gatekeeper under this process. As provided under Section 11C of the Standard Valuation Law (Model #820), any change to the Valuation Manual ultimately requires adoption by the NAIC by an affirmative vote representing (a) at least three-fourths (3/4) of the members of the NAIC voting, but not less than a majority of the total membership, and (b) members of the NAIC representing jurisdictions totaling greater than 75% of the relevant direct premiums written.

> Guidance Note: To maximize the efficiency of the NAIC process and to promote consistency among amendments to the Valuation Manual, it was determined a single gatekeeper would work best. LATF was chosen as they were most directly involved in the Valuation Manual's development. LATF's review of HATF amendments would not focus on health related content.

Information and issues with respect to amendment of the Valuation Manual can be presented to the LATF/HATF in a variety of ways. Issues can be recommended or forwarded from other NAIC working groups or task forces, or from interested parties. In order for an issue or proposed change to the Valuation Manual to be placed on a Pending List, the recommending party shall submit an amendment proposal form. An amendment form should be submitted 20 days prior to the next scheduled LATF/HATF meeting to be placed on the agenda for that meeting.

LATF/HATF can move an item on the Pending List to either the Rejected List or to the Active List. Any disposition of items will occur in an open meeting. Items moved to the Active List will be categorized as Substantive, Non-Substantive, or an Update to a Table.

VALUATION MANUAL – VM-00

SUBSTANTIVE ITEMS

Substantive changes to the Valuation Manual are proposed amendments to the Valuation Manual that would change or alter the meaning, application or interpretation of a provision. All changes to the Valuation Manual will be considered substantive, unless specifically identified as either a Non-Substantive Item or an Update to a Table by simple majority vote of LATF/HATF. Any item placed on the Active List as Substantive will be exposed by LATF/HATF for comment period commensurate with the length of the draft and the complexities of the issue, but for no less than 21 days. The comment period will be deemed to have begun when the draft has been ~~publicly~~ placed on the appropriate public NAIC webpage. LATF/HATF will hold at least one open meeting (in person or by conference call) to consider comments before holding a final vote on any Substantive Items. Subsequent exposures of Substantive Items will be for a minimum of 7 days. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated on any Substantive Items. Adoption of all changes at LATF/HATF will be by simple majority.

NON-SUBSTANTIVE ITEMS

Non-substantive changes to the Valuation Manual are changes that primarily pertain to technical revisions such as changes to titles, words, definitions, procedures, grammar corrections, reference errors, making individual sections of the Valuation Manual consistent with each other, etc. that are necessary in order to clarify an intent that has already been thoroughly documented either in the NAIC Proceedings, the Valuation Manual, or other NAIC guidance~~. In order to be considered to be a Non-Substantive Item,~~ LATF/HATF must adopt the change with an affirmative vote of a simple majority of the LATF/HATF membership voting. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated on any Non-Substantive Items. Non-Substantive Items will be exposed for comment with a period of time commensurate with the complexity of the change.

UPDATES TO DESIGNATED TABLES

Certain designated Tables contained in the Valuation Manual are intended to be updated on a periodic basis, as they provide current reference data integral to annual calculations (e.g., those tables located in Appendix 2 of VM-20, which have a process for annual and quarterly updates specifically prescribed in the Valuation Manual). Updates to these tables in accordance with this process are not considered to be an amendment of the Valuation Manual itself, and are not subject to the requirements of Section 11C of Model #820 for the amendment of the Valuation Manual. Updates to these designated tables will be exposed by LATF/HATF for a minimum 14 day comment period. If no comments are received, LATF/HATF will vote on the item at the next regularly scheduled meeting. If comments are received, LATF/HATF will hold at least one open meeting (in person or by conference call) to consider comments. Meeting notices for LATF/HATF meetings will indicate if a vote is anticipated toon any Update to Designated Tables.

WAIVER OF TASK FORCE PROCEDURE

If LATF/HATF determines that a waiver of the above procedures is necessary to expeditiously consider modification of the Valuation Manual in order to advance a valid regulatory purpose, it may, upon a three-fourths (3/4) majority vote of its members present and voting, modify the above procedures. However, in no event will Substantive Items be considered for adoption without a 14 day comment period.

COORDINATION WITH SAPWG

Proposed changes to the Valuation Manual must be consistent with existing model laws, including the Standard Valuation Law, and, to the extent determinable, with models in development. To the extent that proposed changes to the Valuation Manual could have an impact on accounting and reporting guidance and other requirements as referenced by the *Accounting Practices and Procedures Manual*, proposed changes must be reviewed by SAPWG for consistency with the *Accounting Practices and Procedures Manual,* including as to implementation dates. LATF or its staff support will prepare a summary recommendation that will include as appropriate an analysis of the impact of proposed changes.

If SAPWG reaches the conclusion that the proposed changes to the Valuation Manual are inconsistent with the authoritative guidance in the *Accounting Practices and Procedures Manual*, LATF will work with SAPWG to resolve such inconsistencies.

VALUATION MANUAL – VM-00

COMMITTEE PROCEDURES

The Life Insurance and Annuities (A) Committee (A Committee) or the Health Insurance and Managed Care (B) Committee (B Committee) will consider any Valuation Manual amendments (whether Substantive or Non-Substantive) as a separate agenda item at any regularly scheduled meeting. Amendments to the life and annuity sections of the Valuation Manual must first be approved by LATF, and LATF, as gatekkeper under this process, shall then review and prepare for consideration by the A Committee any changes to the life and annuity sections of the Valuation Manual. Amendments to the health insurance sections of the Valuation Manual must first be approved by HATF, and ~~the Health Insurance and Managed Care (B) Committee.~~ LATF, as gatekeeper under this process, shall then review and prepare for consideration by the B Committee any changes to the health insurance sections of the Valuation Manual. No additional exposure period is required for review by LATF. Updates to Tables will be reported to the appropriate Committee, but will not require a separate vote. In order to allow for additional input, the A and B Committees generally will not vote on adoption of any Substantive Items unless 14 days have elapsed since adoption by LATF. Adoption of all changes by the A and B Committees will be by simple majority.

EXECUTIVE/PLENARY PROCEDURES

The NAIC Executive/Plenary will generally consider Valuation Manual amendments at the National Meeting following adoption by the appropriate Committee. In order to allow sufficient time to implement Substantive Items, final action by Executive/Plenary on Substantive Items will generally be taken at the Summer National Meeting. The voting requirements for adoption at Executive/Plenary are as set out in Section 11C of Model #820. Unless otherwise specified, all Valuation Manual amendments shall be effective January 1 following adoption by the NAIC.

OVERVIEW OF RESERVE CONCEPTS

Reserve requirements prescribed in the Valuation Manual are intended to support a statutory objective of conservative valuation to provide protection to policyholders and promote solvency of companies against adverse fluctuations in financial condition or operating results pursuant to requirements of the SVL.

A principle-based valuation is a reserve valuation that uses one or more methods or one or more assumptions determined by the insurer pursuant to requirements of the SVL and the Valuation Manual. This is in contrast to valuation approaches that use only prescribed assumptions and methods. Although a reserve valuation may involve a method or assumption determined by the insurer, such valuation is a principle-based valuation only as specified in the Valuation Manual for a product or category of products.

A principle-based reserve valuation must only reflect risks that are:

1. Associated with the policies or contracts being valued, or their supporting assets; and
2. Determined to be capable of materially affecting the reserve.

Risks not to be included in reserves are those of a general business nature, those that are not associated with the policies or contracts being valued, or those that are best viewed from the company perspective as opposed to the policy or contract perspective. These risks may involve the need for a liability separate from the reserve, or may be provided for in capital and surplus.

Since no list can be comprehensive and applicable to all types of products, this section of the Valuation Manual provides examples of the general approach to the determination of the meaning of "associated with the policies or contracts" while recognizing that each relevant section of the Valuation Manual will deal with this issue from the perspective of the products subject to that section. Examples of risks to be included in a principle-based valuation include risks associated with policyholder behavior (such as lapse and utilization risk), mortality risk, interest rate risk, asset default risk, separate account fund performance, and the risk related to the performance of indices for contractual guarantees.

VALUATION MANUAL – VM-00

CORPORATE GOVERNANCE REQUIREMENTS FOR PRINCIPLE-BASED RESERVES

The requirements found in VM-Appendix G (VM-G) provide corporate governance requirements applicable to products subject to PBR as specified in this Valuation Manual. VM-G applies to products issued prior to the operative date of the Valuation Manual that are subject to Actuarial Guideline XLIII in VM-00.

Appendix C in addition to those products subject to VM-21 issued on or after the operative date of Valuation Manual.

II. RESERVE REQUIREMENTS

This section provides the minimum reserve requirements by type of product. All reserve requirements provided by this section relate to business issued on or after the operative date of the Valuation Manual. All reserves must be developed in a manner consistent with the requirements and concepts stated in the Overview of Reserve Concepts in Section I of the Valuation Manual.

LIFE INSURANCE PRODUCTS

1. This subsection establishes reserve requirements for all contracts issued on and after the operative date of the Valuation Manual that are classified as life contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50), with the exception of annuity contracts and credit life contracts. Minimum reserve requirements for annuity contracts and credit life contracts are provided in other subsections of the Valuation Manual.

2. Minimum reserve requirements for variable and non-variable individual life contracts, excluding preneed life contracts, industrial life contracts[1] and credit life contracts, are provided by VM-20 except for election of the transition period in paragraph 3 of this subsection.

   Minimum reserve requirements of VM-20 are considered PBR requirements for purposes of the Valuation Manual and VM-31 unless VM-20 or other requirements apply only the net premium reserve method or applicable requirements in VM-A and VM-C.

   Minimum reserve requirements for life contracts not subject to VM-20 are those pursuant to applicable requirements in VM-A and VM-C.

3. A company may elect to establish minimum reserves pursuant to applicable requirements in Appendix A (VM-A) and Appendix C (VM-C) for business otherwise subject to VM-20 requirements and issued during the first three years following the operative date of the Valuation Manual. A company electing to establish reserves using the requirements of VM-A and VM-C may elect to use the 2017 CSO as the mortality standard following the conditions outlined in VM-20 Section 3. If a company during the three years elects to apply VM-20 to a block of such business, then a company must continue to apply the requirements of VM-20 for future issues of this business.

[1] An industrial life contract is a life insurance contract that is required to comply with the minimum reserve standard for industrial life insurance policies as provided by the Valuation Manual and which meet the requirements of the state where issued for industrial life insurance policies.

Mortality Tables – VM-M

ANNUITY PRODUCTS

1. This subsection establishes reserve requirements for all contracts classified as annuity contracts defined in the *Accounting Practices and Procedures Manual,* Statutory Statement of Accounting Principle 50 (SSAP 50).

2. Minimum reserve requirements for variable annuity contracts and similar business, specified in VM-21, shall be those provided by VM-21. The minimum reserve requirements of VM-21 are considered PBR requirements for purposes of the Valuation Manual.

3. Minimum reserve requirements for fixed annuity contracts are those requirements as found in VM-A and VM-C as applicable.

DEPOSIT-TYPE CONTRACTS

1. This subsection establishes reserve requirements for all contracts classified as deposit-type contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50).

2. Minimum reserve requirements for deposit-type contracts are those requirements as found in VM-A and VM-C as applicable.

HEALTH INSURANCE PRODUCTS

1. This subsection establishes reserve requirements for all contracts classified as health contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50).

2. Minimum reserve requirements for accident and health insurance contracts, other than Credit Disability, are those requirements provided by VM-25 and VM-A and VM-C requirements, as applicable.

CREDIT LIFE AND DISABILITY PRODUCTS

1. This subsection establishes reserve requirements for all credit life, credit disability products and other credit-related products defined as follows:

2. "Credit life insurance" means insurance on a debtor or debtors, pursuant to or in connection with a specific loan or other credit transaction, to provide for satisfaction of a debt, in whole or in part, upon the death of an insured debtor.

   Credit life insurance does NOT include:

   a. Insurance written in connection with a credit transaction that is:

      i. Secured by a first mortgage or deed of trust; and

      ii. Made to finance the purchase of real property or the construction of a dwelling thereon, or to refinance a prior credit transaction made for such a purpose.

   b. Insurance sold as an isolated transaction on the part of the insurer and not related to an agreement or a plan for insuring debtors of the creditor.

   c. Insurance on accounts receivable.

3. "Credit disability insurance" means insurance on a debtor or debtors to or in connection with a specific loan or other credit transaction, to provide for lump sum or periodic payments on a specific loan or other credit transaction due to the disability of the insured debtor.

4. "Other Credit-Related Insurance" means insurance on a debtor or debtors, pursuant to or in connection with a specific loan or other credit transaction, including a real estate secured loan, to provide for satisfaction of a debt, in whole or in part, upon the death or disability of an insured debtor.

    a. Other Credit-Related insurance includes insurance written in connection with a credit transaction that is:

        i. Secured by a first mortgage or deed of trust written as credit insurance, debtor group insurance or group mortgage insurance; and

        ii. Made to finance the purchase of real property or the construction of a dwelling thereon, or to refinance a prior credit transaction made for such a purpose.

    b. Other Credit-Related insurance DOES NOT include:

        i. Insurance sold as an isolated transaction on the part of the insurer and not related to an agreement or a plan for insuring debtors of the creditor; and

        ii. Insurance on accounts receivable.

5. Minimum reserve requirements for credit life, credit disability contracts and other credit-related insurance issued on or after the operative date of the Valuation Manual are provided in VM-26. For purposes of reserves for "other credit-related insurance" within VM-26, the terms "credit life insurance" and "credit disability insurance" shall include benefits provided under contracts defined herein as "other credit-related insurance."

RIDERS AND SUPPLEMENTAL BENEFITS

1. If a rider or supplemental benefit to one of the above types of products has a separately identified premium or charge, then the following apply:

    a. For supplemental benefits, e.g., Disability Waiver of Premium, Accidental Death Benefits, Convertibility or Guaranteed Insurability, the reserves may be computed separate from the base contract following the reserves requirements for that benefit;

    b. For term life insurance riders on persons other than the named insured[s] on the base policy, the reserve may be computed separate from the base policy following the reserve requirements for that benefit;

    c. For term life insurance riders on the named insured[s] on the base policy, the reserve shall be valued as part of the base policy;

    d. For riders that enhance or modify the terms of the base contract, e.g., a secondary guarantee rider or a cash value enhancement rider, the reserve shall be valued as part of the base policy; and

    e. For any riders not addressed by paragraphs 1.b through 1.d above, the reserve shall be valued as part of the base policy.

2. If a rider or supplemental benefit does not have a separately identified premium or charge, all cash flows associated with the rider or supplemental benefit must be included in the calculation of the reserve for the base policy. For example, reserves for a universal life policy with an accelerated benefit for long-term care must include cash flows from the long-term care benefit in determining minimum reserves in compliance with VM-20. A separate reserve is not determined for the rider or supplemental benefit.

CLAIM RESERVES

Regardless of the requirement for use of the PBR approach to policy reserves, the claim reserves, including waiver of premium claims, are not subject to PBR requirements of the Valuation Manual.

III. ACTUARIAL OPINION AND REPORT REQUIREMENTS

Requirements regarding the annual actuarial opinion and memorandum pursuant to Section 3 of the NAIC Model Standard Valuation Law (VM-05) are provided in VM-30.

PBR Report requirements applicable to products or types of products subject to PBR as specified in the Valuation Manual are provided in VM-31.

IV. EXPERIENCE REPORTING REQUIREMENTS

Experience reporting requirements are provided in VM-50. The associated experience reporting formats and additional instructions are provided in VM-51.

V. VALUATION MANUAL MINIMUM STANDARDS

This section provides the specific minimum reserve standards as referenced by the preceding sections.

Amendment to Remove References to the “Seriatim Reserve”

Adopted by the Life Actuarial (A) Task Force
January 21, 2016
Adopted by the A Committee
April 4, 2016
Send comments to Reggie Mazyck
(RMazyck@NAIC.ORG)

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.
   Removal of references to the "seriatim reserve" in the Valuation Manual

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:

   The following sections of VM-20 and VM-31 from the draft of the Valuation Manual adopted by the NAIC on June 18, 2015:

   VM-20 Section 1C, Section 2G, and Section 7H
   VM-31 Section 3.E.3

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 attached.

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

   In the early drafts of VM-20 before the Net Premium Reserve (NPR) was added to VM-20, the calculation of the deterministic reserve was done on a seriatim basis. The PV of cash flows for each policy was called the "seriatim reserve". However, when the NPR was added to VM-20, the deterministic reserve was modified to be calculated on an aggregate basis, not a seriatim basis. Hence, the concept of the "seriatim reserve" was dropped, and references to the seriatim nature of the deterministic reserve were eliminated. However, several references to the seriatim nature of the deterministic reserve still remain in VM-20. This proposal eliminates these references.

   One of the changes that is part of this proposal eliminates the second paragraph of Section 2G, for the following reasons:

   1. The current wording of the paragraph is confusing, and can be interpreted to require a comparison of the "aggregate deterministic reserve" to the sum of the policy by policy "seriatim reserves" to ensure the former is not less than the latter. However, Section 2G is addressing simplification approaches, such as utilizing a cash flow model that groups policies into modeling cells (such as 5-year issue age brackets) rather than utilizing a seriatim cash flow model. Grouping policies in the cash flow model for simplification purposes is a completely different issue from the differences that arise between the sum of policy-by–policy seriatim reserves (that are floored at zero for each policy) and a reserve approach based on aggregate cash flows. Since the seriatim reserve is no longer required, eliminating this paragraph eliminates this confusion.

   2. The requirements in this paragraph describe a reporting requirement, not a reserve requirement, and thus, needs to be moved to VM-31. The reserve requirement is stated in the first paragraph of Section 2G, and this second paragraph outlines the demonstration that needs to be provided to support that requirement. This proposal also includes revising the paragraph in VM-31 that defines the reporting requirement for the first paragraph of Section 2G.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

W:\National Meetings\2010\...\TF\LHA\

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

Section 1. Purpose and Definitions

A. These requirements establish the minimum reserve valuation standard for individual life insurance policies issued on or after the operative date of the Valuation Manual and subject to a PBR valuation with a net premium reserve floor under the Standard Valuation Law.

B. These requirements constitute the Commissioner's Reserve Valuation Method (CRVM) for policies of individual life insurance.

C. Definitions

~~24. The term "seriatim reserve" means the amount determined for a given policy that is used as a step in the calculation of the deterministic reserve.~~

Section 2. Minimum Reserve

G. A company may use simplifications, approximations and modeling efficiency techniques to calculate the net premium reserve, the deterministic reserve and/or the stochastic reserve required by this section if the company can demonstrate that the use of such techniques does not understate the reserve by a material amount and the expected value of the reserve calculated using simplifications, approximations and modeling efficiency techniques is not less than the expected value of the reserve calculated that does not use them. This does not preclude use of model segmentation for purposes of determining discount rates.

~~In such case, information shall be available to ensure that a deterministic reserve amount calculated as the total of the seriatim (policy by policy, with respect to liability cash flows) reserve calculations produces a reserve not materially different than the deterministic reserve amount calculated using groupings of policies. This does not preclude use of model segmentation for purposes of determining discount rates. VM-31 Section 3.E.3. provides details.~~

Section 7. Cash Flow Models

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–f below. 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.G.

~~4~~3. 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~~4. 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~~deterministic and scenario reserves is driven by differences in methodology. The deterministic ~~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.

VM-31 PBR REPORT REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLE-BASED RESERVE VALUATION

Section 3. PBR Actuarial Report Requirements

E. PBR Actuarial Report Requirements for Individual Life Insurance Policies or Contracts.

The company shall include in the PBR Actuarial Report:

3. The following information regarding the cash flow model(s) used by the company in determining principle-based reserves:

   a. Description of modeling system(s) used.

   b. Description of model segments and rationale for the organization of the policies and assets into model segments.

   c. Description of approach and rationale used to group assets and policies for the deterministic reserve calculation within each model segment.

      A clear indication shall be provided of how the company met the requirements of Section 2.G. of VM-20 with respect to the grouping of policies. It shall be documented that, upon request, information may be obtained that is adequate to permit the audit of any subgroup of policies ~~the deterministic reserve amount~~ to ensure that the ~~a deterministic~~ reserve amount calculated using a ~~as the total of the~~ seriatim (policy-by-policy) liability model ~~, with respect to liability cash flows) reserve calculations~~ produces a reserve amount not materially higher ~~different~~ than the ~~deterministic~~ reserve amount calculated using the grouped liability model.

Amendment for Clarifications to the Determination of Credit Rating

Adopted by the Life Actuarial (A) Task Force
February 4, 2016
Adopted by the A Committee
April 4, 2016
Send comments to Reggie Mazyck
(RMazyck@NAIC.ORG)

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   John Bruins, ACLI, clarifications to the determination of Credit Rating

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, June 18, 2015 version, Section 9.F.3. and Appendix 2.

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.)

F. Asset Assumptions

* * * * * * * * * * *

3. Determination of PBR Credit Rating

   a. Table K of Appendix 2 converts the ratings of NAIC Approved Ratings Organizations (AROs) and NAIC designations to a numeric rating system from 1-20 that is to be used in the steps below. A rating of 21 applies for any ratings of lower quality than those shown in the table.

   b. For an asset with an NAIC designation that is derived solely by reference to underlying ARO ratings without adjustment, the company shall determine the PBR credit rating as the average of the numeric ratings corresponding to each available ARO rating, rounded to the nearest whole number.

   c. For an asset that is not a commercial mortgage and which has ~~with~~ an NAIC designation that is not derived solely by reference to underlying ARO ratings without adjustment, the company shall determine the PBR credit rating as the second least favorable numeric rating associated with that NAIC designation.

   d. For a commercial or agricultural mortgage loan, the company shall determine the PBR credit rating as the Table K lookup of the numeric rating corresponding to the loan's NAIC CM category, where the latter is assigned by the company in accordance with NAIC Life RBC instructions.

   Guidance Note: The 1-21 PBR credit rating system attempts to provide a more granular assessment of credit risk than has been used for establishing NAIC designations for risk-based capital and asset valuation reserve purposes. The reason is that unlike for RBC and AVR, the VM-20 reserve cash flow models start with the gross yield of each asset and make deductions for asset default costs. The portion of the yield represented by the purchase spread over Treasuries is often commensurate with

the more granular rating assigned, such as A+ or A-. Thus, use of the PBR credit rating system may provide a better match of risk and return for an overall portfolio in the calculation of VM-20 reserves. However, for assets that have an NAIC designation that does not rely directly on ARO ratings, a more granular assessment consistent with the designation approach is not currently available.

Guidance Note: The *Purposes and Procedures Manual of the NAIC Securities Valuation Office,* which establishes the rules for setting NAIC designations, underwent significant change during 2009-2010, particularly in the area of assessing the credit risk of structured securities. The Valuation of Securities (E) Task Force of the NAIC (VOSTF) implemented an interim solution in 2009 to set designations for non-agency residential mortgage-backed securities based on modeling by a third-party firm. VOSTF is developing a long-term solution for these and other structured securities such as commercial mortgage-backed securities that may involve a combination of modeling and other methods such as "notching up" or "notching down" the result derived by reference to ARO ratings. In all such cases where the ARO rating basis is either not used at all or is adjusted in some way, the intent is that paragraph (c) be used to determine the PBR credit rating. Another common example where (c) is to be used would be securities that are not SVO Filing Exempt, such as many private placement bonds. For example, a private placement that was not Filing Exempt and was rated by the SVO as NAIC 1 would be assigned a PBR credit rating of 6 (second least favorable), equivalent to A2.

Appendix 2. Tables for Calculating Asset Default Costs and Asset Spreads, Including Basis of Tables

This appendix describes the basis for certain prescribed asset default cost and asset spread tables to be updated and published periodically by the NAIC via website. These tables are needed for insurers to comply with the requirements of Subsection 9.F for asset default costs and asset spreads in VM-20. In some cases, as specified in 9.F, tables published in this appendix will serve as the NAIC published table until a different table is published. The development of the various tables is described in subsections A-E of this appendix. The actual tables are shown in subsection F of this appendix. Certain tables were developed based on various source material referenced herein. Other tables are simply compilations or presentations of data from such sources.

It is important to note up front that the development of prescribed default costs is based entirely on analysis of corporate bonds. Default costs for other fixed income securities and commercial and agricultural mortgages are assumed to follow those of corporate bonds with similar NAIC designations through a mapping tool called "PBR credit rating." Examples of other fixed income securities are structured securities, private placements, and preferred stocks. Discussions at the NAIC during 2009-2010, particularly at the Valuation of Securities (E) Task Force (VOSTF), focused on the observation that similarly rated assets of different types may have similar likelihood of default or loss of principal but may have a significantly different distribution of the severity of that loss. Discussions have particularly focused on the different drivers of severity between structured securities and corporate bonds. As a result, VOSTF has been developing updated methods to assign NAIC designations for C-1 risk based capital purposes for structured securities in order to better take into account these differences. The VM-20 procedure to assign a PBR credit rating has been structured so that in the cases where VOSTF decides to go away from directly using the ratings of approved ratings organizations, the PBR credit rating will be based on the NAIC designation rather than underlying ratings. Where VOSTF continues to authorize use of underlying ratings, the PBR credit rating will also

be based on those ratings. However, VM-20 uses the underlying ratings to assign the PBR credit rating in a somewhat different manner.

Subsection 9.F.3 describes the process the company must follow to assign a PBR credit rating for any fixed income asset with an NAIC designation.

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

With the addition of commercial mortgages to the table of default rates, this section providing direction for the default tables should be clarified.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Amendment for Definition and Clarification of the Term "Modeled Reserve"

Adopted by the Life Actuarial (A) Task Force
January 28, 2016
Adopted by the A Committee
April 4, 2016

Send comments to Reggie Mazyck
(RMazyck@NAIC.ORG)

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.
   Definition and clarification of the term "modeled reserve" in VM-20.

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:

   The following sections of VM-20 from the draft of the Valuation Manual adopted by the NAIC on June 18, 2015:

   Section 1C
   Section 7D, 7E, 7F and 7L
   Section 8C
   Section 9A, 9D and 9E

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 the attached.

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

   Before the Net Premium Reserve was added to VM-20, the minimum reserve was equal to the greater of the deterministic reserve and the stochastic reserve. Hence, the minimum reserve at that point was a fully modeled reserve. However, since the Net Premium Reserve has now been added to VM-20, the resulting minimum reserve may not be a fully modeled reserve (since the Net Premium Reserve is a prescribed reserve, not a modeled reserve). To recognize the distinction between the minimum reserve and the modeled reserve, the term "modeled reserve" has been incorporated several times in the current draft of VM-20, but the term has not explicitly defined. In addition, there are still several references to the "minimum reserve" in VM-20 that should more appropriately be the "modeled reserve". This proposal defines the term "modeled reserve" in section 1 of VM-20, and then replaces the term "minimum reserve" with "modeled reserve" where appropriate.

   This proposal also clarifies that the amount of starting assets for the asset cash flow model should be set equal to the estimated modeled reserve (not the estimated minimum reserve) adjusted for the opening balance of the PIMR. The proposal also clarifies that the 98% to 102% collar on the amount of starting assets is to be compared to the amount of the resulting modeled reserve.

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Section 1. Purpose and Definitions

C. Definitions

8. The term "modeled reserve" means the deterministic reserve on the policies determined under Section 2.A.2 plus the greater of the deterministic reserve and the stochastic reserve on the policies determined under Section 2.A.3.

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 modeled ~~minimum~~ reserve plus the PIMR balance on the projection start date, 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.

2. ~~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.

E. Reinvestment Assets and Disinvestment

1. At the valuation date and each projection interval as appropriate, model the purchase of general account reinvestment assets with available cash and net asset and liability cash flows in a manner that is representative of and consistent with the company's investment policy for each model segment, subject to the following requirements:

g. Notwithstanding the above requirements, the model investment strategy and/or any non-prescribed asset spreads shall be adjusted as necessary so that the modeled ~~minimum~~ reserve is not less than would be obtained by substituting an alternative investment strategy in which all fixed income reinvestment assets are public non-callable corporate bonds with gross asset spreads, asset default costs, and investment expenses by projection year that are consistent with a credit quality blend of 50% PBR credit rating 6 (A2/A) and 50% PBR credit rating 3 (Aa2/AA). The following pertains to this requirement:

i. Policy loans, equities, and derivative instruments associated with the execution of a clearly defined hedging strategy (in compliance with Sections 7.L and 7.M) are not impacted by this requirement.

Guidance Note: In many cases, particularly if the model investment strategy does not involve callable assets, it is expected that the demonstration of compliance will not require running the reserve calculation twice. For example, an analysis of the weighted average net reinvestment spread on new purchases by projection year (gross spread minus prescribed default costs minus investment expenses) of the model investment strategy compared to the weighted average net reinvestment spreads by projection year of the alternative strategy may suffice. The assumed mix of asset types, asset credit quality, or the levels of non-prescribed spreads for other fixed income investments may need to be adjusted to achieve compliance.

F. Cash Flows from Invested Assets

The company shall determine cash flows from invested assets, including starting and reinvestment assets, as follows:

1. Determine cash flows for each projection interval for general account fixed income assets including derivative asset programs associated with these assets as follows:

   a. Model gross investment income and principal repayments in accordance with the contractual provisions of each asset and in a manner consistent with each scenario. Grouping of assets is allowed if the company can demonstrate that grouping does not materially understate the modeled ~~minimum~~ reserve more than would have been obtained using a seriatim approach.

L. Modeling of Derivative Programs

1. When determining the deterministic reserve and the stochastic reserve, the company shall include in the projections the appropriate costs and benefits of derivative instruments that are currently held by the company in support of the policies subject to these requirements. The company shall also include the appropriate costs and benefits of anticipated future derivative instrument transactions associated with the execution of a clearly defined hedging strategy; and the appropriate costs and benefits of anticipated future derivative instrument transactions associated with non-hedging derivative programs (e.g., replication, income generation) undertaken as part of the investment strategy supporting the policies, provided they are normally modeled as part of the company's risk assessment and evaluation processes.

Guidance Note: The prohibition in these modeled ~~minimum~~ reserve requirements against projecting future hedging transactions other than those associated with a clearly defined hedging strategy is intended to address initial concerns expressed by various parties that reserves could be unduly reduced by reflection of programs whose future execution and performance may have greater uncertainty. The prohibition appears, however, to be in conflict with Principle 2 listed in the Valuation Manual. Companies may actually execute and reflect in their risk assessment and evaluation processes hedging strategies similar in many ways to clearly defined hedging strategies but lack sufficient clarity in one or more of the qualification criteria. By excluding the associated derivative instruments, the investment strategy that is modeled may also not reflect the investment strategy the company actually uses. Further, since the future hedging transactions may be a net cost to the company in some scenarios and a net benefit in other scenarios, the exclusion of such transactions can result in a modeled ~~minimum~~ reserve that is either lower or higher than it would have been if the transactions were not excluded. The direction of such impact on the reserves could also change from period to period as the actual and projected paths of economic conditions change. A more graded approach to recognition of non-qualifying hedging strategies may be more theoretically consistent with Principle 2. The requirements stated here for handling hedging strategies are essentially consistent with those included in the CTE methodology portion of the September 2006 exposure draft of Actuarial Guideline VACARVM for variable annuity reserving. It is recommended that, as greater experience is gained by actuaries and regulators with the principle-based approach, and as industry hedging programs mature, the various requirements of this section be reviewed.

Section 8. Reinsurance

C. Reflection of Reinsurance Cash Flows in the Deterministic Reserve or Stochastic Reserve

In calculations of the deterministic reserve or stochastic reserve pursuant to Sections 4 and 5:

6. An assuming company shall use assumptions to project cash flows to and from ceding companies that reflect the assuming company's experience for the business segment to which the reinsured policies belong, and reflect the terms of the reinsurance agreement. The company shall assume that the counterparties to a reinsurance agreement are knowledgeable about the contingencies involved in the agreement and likely to exercise the terms of the agreement to their respective advantage, taking into account the context of the agreement in the entire economic relationship between the parties. In setting assumptions for the non-guaranteed elements in reinsurance cash flows, the company shall include, but not be limited to, the following:

   a. The usual and customary practices associated with such agreements.

b. Past practices by the parties concerning the changing of terms, in an economic environment similar to that projected.

c. Any limits placed upon either party's ability to exercise contractual options in the reinsurance agreement.

d. The ability of the direct-writing company to modify the terms of its policies in response to changes in reinsurance terms.

e. Actions that might be taken by a party if the counterparty is in financial difficulty.

The company shall account for any actions that the ceding company and, if different, the direct-writing company have taken or are likely to take that could affect the expected cash flows of the reinsured business in determining assumptions for the modeled ~~minimum~~ reserve.

7. The company shall use assumptions in determining the modeled ~~minimum~~ reserve that account for any actions that the assuming company has taken or is likely to take that could affect the expected cash flows of the reinsured business.

Section 9. Assumptions

A. General Assumption Requirements

7. The company shall examine the results of sensitivity testing to understand the materiality of prudent estimate assumptions on the modeled ~~minimum~~ reserve. The company shall update the sensitivity tests periodically as appropriate, considering the materiality of the results of the tests. The company may update the tests less frequently when the tests show less sensitivity of the modeled ~~minimum~~ reserve to changes in the assumptions being tested or the experience is not changing rapidly. Providing there is no material impact on the results of the sensitivity testing, the company may perform sensitivity testing:

D. Policyholder Behavior Assumptions

1. General Prudent Estimate Policyholder Behavior Assumption Requirements

The company shall determine prudent estimate policyholder behavior assumptions such that the assumptions:

a. Reflect expectations regarding variations in anticipated policyholder behavior relative to characteristics that have a material impact on the modeled ~~minimum~~ reserve, which may include gender, attained age, issue age, policy duration, time to maturity, tax status, level of account and cash value, surrender charges, transaction fees or other policy charges, distribution channel, product features and whether the policyholder and insured are the same person.

b. Are appropriate for the block of business being valued, giving due consideration to other assumptions used in conjunction with the cash flow model and to the scenarios whose results are likely to contribute to the modeled ~~minimum~~ reserve.

3. Margins for Prudent Estimate Policyholder Behavior Assumptions

The company shall establish margins for policyholder behavior assumptions in compliance with subsection 9.B subject to the following:

a. To the extent that there is an absence of relevant and fully credible data, the company shall determine the margin such that the policyholder behavior assumption is shifted toward the conservative end of the plausible range of behavior which is the end of the range that serves to increase the modeled ~~minimum~~ reserve.

4. Additional Sensitivity Testing for Policyholder Behavior Assumptions

The company shall examine the sensitivity of assumptions on the modeled ~~minimum~~ reserve as required under Subsection A.3 of this section and shall at a minimum sensitivity test:

E. Expense Assumptions

1. General Prudent Estimate Expense Assumption requirements. In determining prudent estimate expense assumptions, the company:

j. Shall allocate expenses using an allocation method that is consistent across company lines of business. Such allocation must be determined in a manner that is within the range of actuarial practice and methodology and consistent with applicable Actuarial Standards of Practice. Allocations may not be done for the purpose of decreasing the modeled ~~minimum~~ reserve.

VM_31 Redline

Adopted by LATF 2/25/16
Adopted by A Committee 4/4/16

VM-31 PBR REPORT REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLE-BASED RESERVE VALUATION

Table of Contents

VM-31 redline

123. ~~Investment~~ Certifications
~~14. Senior Management Certification~~
~~F~~E. PBR Actuarial Report Requirements for Variable Annuity Contracts

Section 1. Purpose

These requirements establish the minimum reporting requirements for policies or contracts subject to principle-based reserve valuation under the Standard Valuation Law.

Section 2. General Requirements

A. Each year a company shall prepare, under the direction of one or more qualified actuaries, a principle-based reserve actuarial report (PBR Actuarial Report) if the company computes a[A1] deterministic or stochastic reserve as defined in VM-20 for any policy or contract. ~~is subject to a principle-based reserve valuation under the Standard Valuation Law~~. The PBR Actuarial Report must include documentation and disclosure sufficient for another actuary qualified in the same practice area to evaluate the work.

A company that does not compute any deterministic or stochastic reserves as a result of the company passing the exclusion tests as defined in VM-20 Section 6 for all policies must develop a report that addresses the requirements of Section 3.D.10, and 3.D.12.c. if[A2] applicable.

~~A.~~B. The PBR Actuarial Report must include descriptions of all material decisions made and information used by the company in complying with the minimum reserve requirements and must comply with the minimum documentation and reporting requirements set forth in Section 3.

C ~~D~~. The company shall submit a PBR Actuarial Report to a commissioner upon request.

D. The company shall retain on file, for at least seven (7) years from the date of filing, sufficient documentation so that it will be possible to determine the procedures followed, the analyses performed, the bases for assumptions and the results obtained in a ~~Principle~~principle-b~~B~~ased v~~V~~aluation.

Section 3. PBR Actuarial Report Requirements

A. For purposes of this section.

1. For individual life insurance policies, "principle-based reserves" means that deterministic and/or stochastic reserves were calculated for policies under VM-20.

2. For variable annuity contracts, "principle-based reserves" means that reserves were calculated for contracts under VM-21.

B. The PBR Actuarial Report shall contain a table of contents with associated page numbers.

C. The PBR Actuarial Report shall contain an overview section at the beginning of the report. The overview section shall be submitted to the company's domiciliary commissioner no later than April 1 of the year following the year to which the PBR Actuarial Report applies and the company shall provide this overview section to any other commissioner upon request. The overview section is a part of the PBR Actuarial Report and is subject to the same confidentiality provisions as the PBR Actuarial Report even when provided separately. The overview section shall ~~that~~ include~~s~~ the following:

1. An opening paragraph identifying the qualified actuary, the qualifications of the qualified actuary, and the relationship of the qualified actuary to the company.

2. A description of the policies and/or contracts subject to VM-20 or VM-21.

VM-31 redline

3. The company shall include a copy of Part 1 of theVM-20 Reserve Supplement from the Annual Statement Blank in the PBR Actuarial Report.

4. The company shall include a copy of Part 2 Section 1 of theVM-20 Reserve Supplement from the Annual Statement Blank in the PBR Actuarial Report.

Drafting Note: The VM-20 Reserve Supplement exposed on Nov. 18, 2015 labels the two reserve tables as Part 1 and Part 2 Section 1. The references here will be adjusted as needed based on any changes to labels used in the final adopted Supplement.

~~A table on a net of reinsurance basis, as shown below. If some policies within a product type are valued under a principle-based valuation and other groups of policies are not, add additional rows under the product type in the table and show policies valued under a principle-based valuation and policies not valued under a principle-based valuation separately:~~

~~Product Name~~	~~If us~~	~~Curre n~~	~~Face Amou u~~
~~Life Insurance Issued prior to the operative date of the~~			
~~Term~~			
~~Non-participating Whole Life~~			
~~Participating Whole Life~~			
~~Universal Life without secondary guarantee~~			
~~Universal Life with Secondary~~			
~~Variable Universal Life~~			
~~Variable Life~~			
~~Indexed Life~~			
~~Other~~			
~~TOTAL~~			
~~Life Insurance Issued on or after the operative date of~~			
~~Term~~			
~~Non-participating Whole Life~~			
~~Participating Whole Life~~			

~~Product Name~~	~~If us~~	~~Curre e~~	~~Face Amo~~
~~Universal Life without secondary~~			
~~Universal Life with Secondary~~			
~~Variable Universal Life~~			
~~Variable Life~~			
~~Indexed Life~~			
~~Other~~			
~~TOTAL~~			
~~Annuities~~			
~~Fixed~~			
~~Variable~~			
~~Other~~			
~~TOTAL~~			

VM-31 redline

Accident and Health Insurance			
[list product types]			
Deposit Type Contracts			
[list product types]			

4. A table, as shown below:

Annual Statement Item	Direct	Assumed Re	Ceded	Net
Life Insurance and Annuity				
Life Insurance Issued prior to the operative				
Life Insurance Issued on or after the operative				
Policies stochastically modeled per VM-				
Policies deterministically modeled (not stochastically modeled) per VM-20				
Policies subject to VM-20, but Policies not modeled either stochastically or deterministically (non-PBR)				
Net Premium Reserve per VM-20				
Policies not subject to VM-20Other policies				
Annuities				
Supplementary Contracts Involving Life Contingencies				
Accidental Death Benefit				
Disability – Active				
Disability – Disabled				
Miscellaneous				
Total Life Insurance and Annuity				
Accident and Health Insurance				
Active Life Reserve				
Claim Reserve				

Section 3

Annual Statement Item	**Direct**	**Assumed Re**	**Ceded**	**Net**
Deposit Type Contracts				
TOTAL PRINCIPLE-BASED				
TOTAL RESERVES (PBR + Non-				

5.45.A description of the risks determined material by the Qualified Actuary and associated with policies and/or contracts subject to a principle-based reserve valuation.

VM-31 redline

~~6~~5~~6~~.A description of those areas where the Qualified Actuary relied on others for data, assumptions, projections or analysis in determining the principle-based reserves and a reliance statement from each individual on whom the Qualified Actuary relied which includes:

a. The information provided by the individual.

b. A statement as to the accuracy, completeness or reasonableness, as applicable, of the information provided.

~~7~~6~~7~~.A summary of the valuation assumptions and margins for each major product line subject to a principle-based reserve valuation including:

a. Description of the method used to determine anticipated experience assumptions for each material risk factor, including the degree to which the assumptions are based on experience versus actuarial judgment or other factors, and the source of the experience (e.g., company experience v. industry study).

b. Description of any significant changes from the prior year in the method used to determine anticipated experience assumptions, and the rationale for the change.

c. List of key risk and experience reporting elements that the company is tracking ~~will track~~ in order to monitor changes in experience that will be used to update assumptions and the frequency of the tracking.

d. Description of the method used to determine margins for each material risk factor.

e. Description of any significant changes from the prior year in the method used to determine margins, and the rationale for the change.

f. Disclosure of any valuation assumptions or margins that are inconsistent with risk analysis and management techniques used by the company, a summary of those risk analyses and management techniques with which the assumptions or margins are inconsistent and the rationale for the inconsistency.

g. Description of any considerations helpful in or necessary to understanding the rationale behind and development of assumptions and margins even if such considerations are not explicitly mentioned in the Valuation Manual.

Guidance Note: The requirements in C.7 above require an executive summary version of the assumptions and margins. Additional details on assumptions and margins are included in later sections of the PBR Actuarial Report.

~~8~~7~~8~~. A summary of the approach used to model the assets supporting the policies subject to a principle-based reserve valuation including:

a. Method used and rationale for allocating the total asset portfolio into multiple segments, if applicable.

b. Description of the asset portfolio, including the types of assets, duration and their associated quality ratings.

~~9~~8~~9~~.A description of the approach used to model risk management strategies (e.g., hedging), and other derivative programs, and a summary and description of any clearly defined hedging strategies.

VM-31 redline

~~109~~10. A description of the rationale for determining whether a decision, information, assumption, risk, or other element of a principle-based reserve calculation is material. Such rationale could include such items as a percentage of surplus, a percentage of reserve, or a specific monetary value.

~~1011~~11. Paragraphs certifying that the PBR reserve valuation:

a. Was calculated in accordance with VM-05 and VM-20.

b. The assumptions and margins are prudent estimates.

~~1112~~12. A closing paragraph with the signature, title, telephone number and e-mail address of the Qualified Actuary, the Company name and address, and the date signed.

D. ~~The overview section described in Section 3.C above shall be submitted to the company's domiciliary commissioner no later than April 1 of the year following the year to which the PBR Actuarial Report applies and the company shall provide this overview section to any other commissioner upon request. A commissioner shall keep the over view confidential to the same extent and under the same conditions as the PBR Actuarial Report. Since this overview is a part of the PBR Actuarial Report, even when submitted as a standalone document, it is confidential information as defined in the Standard Valuation Law.~~

~~E.~~ PBR Actuarial Report Requirements for Individual Life Insurance Policies or Contracts.

The company shall include in the PBR Actuarial Report:

~~1. Tables, as shown below, on a net of reinsurance basis unless otherwise indicated, with one set of tables on a net of reinsurance basis showing reported reserve equal to the net reserve; and one set of tables on a gross basis where reported reserve is shown in two columns, as applicable, one column for direct reserves and one column for assumed reserves:~~

~~Groups of policies for which deterministic reserves were calculated but stochastic reserves were not calculated:~~

~~Product~~	~~Ne~~	~~Deterministic Reserve~~	~~Deferre~~	~~Reporte~~
~~Term~~				
~~Non-particip~~				
~~Participating~~				
~~Universal Life without~~				
~~Universal Life with~~				
~~Variable Univers~~				
~~Variable~~				

VM-31 redline

Indexed				
Other				
TOTAL Total Net				
			General	
			Separat	
Total Gross				
			General	
			Separat	

Note: The Total Reported Reserve = col (1) + max{0,[col (2) col(1)+col(3)]}, The Reported Reserve is only calculated determined in aggregate, not by product type. The allocation of the total Reported Reserve is described by to the product categories is accomplished by summing the minimum reserve for each policy within each product category (the minimum reserve for each policy is defined in Section 2.CD of VM-20). A similar process may be used for the deterministic reserve.

Groups of policies for which stochastic reserves weare calculated:

Product	N	Determi	C	Ad	St	De	Re
Term							
Non-participating							
Participatin							
Universal Life without							
Universal Life							
Variable Uni							
Variable							
Indexed							
Other							

VM-31 redline

TOTAL Tot							
					Ge		
					Se		
Total Gro							
					Ge		
					Se		

Note: The Total Reported Reserve = col (1) + max{0,[col (2) col(1)+col(3)]}, The Reported Reserve is only calculated determined in aggregate, not by product type. The allocation of the total Reported Reserve to the product categories is described by accomplished by summing the minimum reserve for each policy within each product category (the minimum reserve for each policy is defined in Section 2D 2.C of VM-20). A similar process may be used for the CTE 70 scenario reserve, the deterministic reserve and the stochastic reserve.

c. Groups of policies for which principle-based reserves are not calculated (includes policies subject to VM-20 but where both the stochastic exclusion test and the deterministic exclusion test are passed).

Product	Net Premium
Term	
Non-participating	
Participating Whole	
Universal Life without secondary guarantee	
Universal Life with Secondary	
Variable Universal Life	
Variable Life	
Indexed Life	
Other	
TOTAL Total Net of Reinsurance	
Total Gross of	

12. A summary of valuation assumptions and margins including a listing of the final prudent estimate valuation assumptions and margins for the major risk factors and a description of any changes in anticipated experience assumptions or margins since the last PBR Actuarial Report.

23. The following information regarding the cash flow model(s) used by the company in determining principle- based reserves:

a. Description of modeling system(s) used.

b. Description of model segments and rationale for the organization of the policies and assets into model segments, consistent with guidance from VM-20 7.A.1.b and VM-20 &.D.1.b.

VM-31 redline

c. Description of approach and rationale used to group assets and policies for the deterministic reserve calculation within each model segment.

A clear indication shall be provided of how the company met the requirements of Section 2.G. of VM-20 with respect to the grouping of policies. It shall be documented that, upon request, information may be obtained that is adequate to permit the audit of any subgroup of policies to ensure that the reserve amount calculated using a seriatim (policy-by-policy) liability model produces a reserve amount not materially higher than the reserve amount calculated using the grouped liability model.

d. Description of approach and rationale used to group assets and policies for the stochastic reserve calculation within each model segment if different than the approach used in paragraph 3.c.

e. Description of approach used to validate model calculations within each model segment for both the deterministic and stochastic models including how the model was evaluated for appropriateness and applicability, how the model results compare with actual historical experience, what, if any, risks are not included in the model, the extent to which correlation of different risks is reflected in the margins~~model~~, and any material limitations of the model.

f. Disclosure of the length of projection period and comments addressing the conclusion that no material amount of business remains at the end of the projection period for both the deterministic and stochastic models.

~~g. Description of how policy loans are modeled, including documentation that if the company substitutes assets that are a proxy for policy loans, the modeled reserve produces reserves that are no less than those produced by modeling existing loan balances explicitly.~~

~~h.~~g. Description of how reinsurance cash flows are modeled.

~~i. Description of and approach and rationale used to group general account equity investments, including non- registered indexed products, including an analysis of the proxy construction process that establishes the relationship between the investment return on the proxy and the specific equity investment category.~~

~~j. Description of approach and rationale used to group separate account funds and subaccounts, including analysis of the proxy construction process that establishes a firm relationship between the investment return on the proxy and the specific variable funds.~~

~~k. Description of the asset investment strategy used in the model, including asset reinvestment and disinvestment assumptions, and documentation supporting the appropriateness of the model investment strategy compared to the actual investment policy of the company.~~

~~l. Documentation that the model investment strategy does not produce a modeled reserve that is less than the modeled reserve that would result by assuming an alternative investment strategy in which all fixed income reinvestment assets are public non-callable bonds with gross asset spreads, asset default costs and investment expenses by projection year that are consistent with a credit quality blend of 50% PBR credit rating of 6 ("A2/A") and 50% PBR credit rating of 9 ("Aa2/AA").~~

~~m. Number of scenarios used for the stochastic reserves and the rationale for that number.~~

VM-31 redline

~~n. If a scenario reduction technique is used, description of the technique and documentation of how the company determined that the technique meets the requirements of Section 2.G. of VM-20.~~

~~4~~3. The following information regarding the mortality assumptions used by the company in determining principle- based reserves:

a. Description of each mortality segment and the rationale for selecting the policies to include in each mortality segment.

b. If the company sub-divides aggregate company experience into various sub-classes or mortality segments to determine company experience mortality rates, documentation that when the mortality segments are weighted together, the total number of expected claims is not less than the company experience data for the aggregate class.

c. Description, ~~A summary of the~~ rationale, and results of applying the underwriting scoring procedure to select the industry basic table/s including the rationale for and results of applying the underwriting scoring procedure and a summary of the analysis performed to evaluate the relationship between underwriting scoring and the anticipated mortality established for mortality segments where the mortality assumption is affected by the application of the underwriting scoring procedure. If underwriting-based justification not involving UCS is being applied, provide similar analysis applicable to the company's methods.

d. If company experience mortality rates for any mortality segment are not based on the experience directly applicable to the mortality segment (whether or not the data source is from the company), then provide a summary containing the following:

i. The source of data including a detailed explanation of the appropriateness of the data, and the underlying source of data, including how the company experience mortality rates were developed, graduated and smoothed.

ii. Similarities or differences noted between policies in the mortality segment and the policies from the data source (e.g., type of underwriting, marketing channel, average policy size, etc.).

iii. Adjustments made to the experience mortality rates to account for differences between the mortality segment and the data source.

iv. The number of deaths and death claim amounts by major grouping and including: age, gender, risk class, policy duration and other relevant information.

e. If the company makes adjustments to company experience mortality rates for changes in risk selection and underwriting practices:

i. Rationale for the adjustments.

ii. A description and summary of the published medical or clinical studies used to support the adjustments.

iii. Documentation of the mathematics used to adjust the mortality.

iv. Summary of any other relevant information concerning any adjustments to the experience mortality that affected the mortality assumption.

f. Description of the method to determine the level of credibility for the ~~period where sufficient~~ company's mortality exposure period ~~data exists~~ including~~:~~

VM-31 redline

~~i. Description of and Support for the rationale for the credibility method chosen.~~

~~ii. A~~a summary of the level of credibility for each mortality segment, along with an indication of whether the level of credibility was determined at the mortality segment level or at a higher level using aggregate mortality experience.

g. If company experience is used, a summary of company experience mortality ~~rates~~ for each mortality segment.

h. To the extent~~Where~~~~If~~ company experience is not used, a description of the industry basic table used for each mortality segment.

i. Description of and rationale ~~Rationale and support~~ for any adjustments to the mortality assumptions for historical mortality improvement up to the valuation date.

j. Description of and rationale for ~~Rationale and support for~~ any adjustments to mortality assumptions for impaired lives or policyholder behavior.

k. If company experience is used, a summary of the approach used to determine the final set of anticipated experience mortality rates, including,

i. The start and ending period of time used to grade company experience to the industry basic table, including the approach used to grade company experience mortality rates to the industry table for advanced ages (attained age 95 or 15 years after policy underwriting).

ii. Description of the industry basic table used for each mortality segment.

iii. Description and results of any smoothing technique used.

iv. Description of any adjustments that were made to ensure reasonable relationships are maintained between mortality segments that reflect the underwriting class or risk class of each mortality segment.

v. Description and justification to support and demonstrate that the resulting anticipated experience assumptions are at least as great as those expected to actually emerge. The description should include the level of granularity at which the comparison is made (e.g. ordinary life, Term only, preferred term, etc.).

l. Description and rationale of any adjustments made to increase margins above the prescribed margin.

m. At least once every 3 years, the results of an actual to expected (without margins) analysis.

4~~5~~. The following information regarding each policyholder behavior assumption used by the company in determining principle-based reserves:

a. Sources and credibility of the data and an explanation of why the data are reasonable and appropriate for this purpose.

b. Explanation of how assumptions were determined for periods that were based on less than fully credible or relevant data.

c. Description of method used to develop anticipated experience assumptions.

VM-31 redline

d. At least once every 3 years, the results of an actual to expected analysis.

e. Margins used, methodology used to determine the margins, and rationale for the particular margins used, including how the results of sensitivity tests were used to determine the margins.

f. How changes in non-guaranteed elements impact the policyholder behavior assumptions.

g. Description of any scenario-dependent dynamic formula.

h. Changes in anticipated experience assumptions and/or margins since last PBR Actuarial Report.

i. For policies that give policyholders flexibility in timing and amount of premium payments, disclose results of sensitivity tests related to the following premium payment patterns: minimum premium payment, no further premium payment, pre-payment of premium assuming a single premium, and pre-payment of premiums assuming level premiums.

j. Specific to lapses, provide description of and rationale regarding adjustments to lapse and mortality assumptions to account for potential anti-selection.

k~~i~~. Competitor rate definition and usage.

~~6~~5. The following information regarding the expense assumptions used by the company in determining principle- based reserves:

a. Methodology used to allocate expenses to the individual life insurance policies subject to a principle-based reserve valuation.

b. Methodology used to apply the allocated expenses to model segments or sub-segments within the cash flow model.

c. Methodology used to determine margins.

6~~7~~. The following information regarding the asset assumptions used by the company in determining principle-based reserves asset assumptions:

a. The amount of starting assets supporting the policies subject to a principle-based valuation, and the method and rationale for determining such amount.

b. Method used and rationale for selecting the assets and apportioning the assets between the policies subject to principle-based reserve valuation and those policies not subject to principle-based reserve valuation.

c. Method used to determine projected market value of assets (if needed for assumed asset sales).

d. Analysis of exposure to foreign currency fluctuations.

e. Summary of the results of the steps for determining the maximum net spread adjustment factor for each model segment, including the method used to determine option adjusted spreads for each existing asset.

f. A summary of the path of net asset earned rates for each model segment calculated for the deterministic reserve.

g. Investment expense assumptions.

VM-31 redline

h. Prepayment, call and put functions.

i. If for all model segments combined, the aggregate annual statement value of starting assets is less than 98% or greater than 102% of the final aggregate minimum reserve, documentation that supports the conclusion that the aggregate minimum reserve is not materially understated as a result of the estimate of the amount of starting assets.

j. With respect to modeling of derivative programs if a company assumes that residual risks and frictional costs have a value of zero, a demonstration that a value of zero is an appropriate expectation.

k Description of how policy loans are modeled, including documentation that if the company substitutes assets that are a proxy for policy loans, the modeled reserve produces reserves that are no less than those produced by modeling existing loan balances explicitly.

li. Description of and approach and rationale used to group general account equity investments, including non- registered indexed products, including an analysis of the proxy construction process that establishes the relationship between the investment return on the proxy and the specific equity investment category.

mj. Description of approach and rationale used to group separate account funds and subaccounts, including analysis of the proxy construction process that establishes a firm relationship between the investment return on the proxy and the specific variable funds.

n. Description of method to translate stochastic economic paths into fund performance.

ok. Description of the asset investment strategy used in the model, including asset reinvestment and disinvestment assumptions, and documentation supporting the appropriateness of the model investment strategy compared to the actual investment policy of the company.

pl. Documentation that the model investment strategy does not produce a modeled reserve that is less than the modeled reserve that would result by assuming an alternative investment strategy in which all fixed income reinvestment assets are public non-callable bonds with gross asset spreads, asset default costs and investment expenses by projection year that are consistent with a credit quality blend of 50% PBR credit rating of 6 ("A2/A") and 50% PBR credit rating of 9 ("Aa2/AA").

qm. Number of scenarios used for the stochastic reserves and the rationale for that number.

rn. If a scenario reduction technique is used, description of the technique and documentation of how the company determined that the technique meets the requirements of Section 2.G. of VM-20.

78. The following information regarding the revenue sharing assumptions used by the company in determining principle-based reserves:

a. Description of revenue sharing agreements and the nature of any guarantees underlying the revenue sharing income included in the projections including the terms and limitations of the agreements; relationship between the company and the entity providing the revenue sharing income; benefits and risk to the company and the entity providing the revenue sharing income of continuing the arrangement; the likelihood that the company will collect the revenue sharing income during the term of the agreement; the ability of the company to

VM-31 redline

replace the services provided by the entity providing the revenue sharing income; the ability of the entity providing the revenue sharing income to replace the service provided by the company.

b. The amount of revenue sharing income and a description of the rationale for the amount of revenue sharing income included in the projections including any reduction for expenses.

c. The level of margin in the prudent estimate revenue sharing income assumptions and description of the rationale for the margin for uncertainty.

8~~9~~. The following information regarding the reinsurance assumptions used by the company in determining principle-based reserves:

a. For those reinsurance agreements included in the calculation of the minimum reserve as per VM-20 Section 8.A, a d~~D~~escription of each reinsurance agreement including but not limited to the type of agreement, the counterparty, the risks reinsured, the portion of business reinsurance, and whether the agreement complies with the requirements of the credit for reinsurance under the terms of the Accounting Practices and Procedures Manual.

b. Description of reinsurance assumptions used to determine the ~~and reinsurance~~ cash flows included in the model.

c. To the extent that a single deterministic valuation assumption for risk factors associated with certain provisions of reinsurance agreements will not adequately capture the risk of the company, a description of the separate stochastic analysis that was used outside the cash flow model to quantify the impact on reinsurance cash flows to and from the company. The description should include which variables were modeled stochastically.

d. If a policy is covered by more than one reinsurance agreement, description of method to allocate reinsurance cash flows from each agreement.

e. Pursuant to VM-20 Section 8.C.11, i~~I~~f the company concludes that modeling the assets supporting reserves held by a counterparty is not necessary, documentation of the testing and logic leading to that conclusion.

9~~10~~. The following information, where applicable, regarding the non-guaranteed element (NGE) assumptions used by the company in determining principle-based reserves:

a. Description of approach used to model NGE's, including a discussion of how future NGE amounts were adjusted in scenarios to reflect changes in experience and including how lag in timing of any change in NGE relative to date of recognition of change in experience was reflected in projected NGE amounts.

b. Description of the approach to establish a margin for conservatism.

c. Description of how the company's past NGE practices and established non-guaranteed element policies were reflected in projected NGE amounts.

d. Description of the following: (i) whether and how projected levels of NGE's in the model are consistent with experience assumptions used in each scenario; and (ii) whether and how policyholder behavior assumptions are consistent with the NGE are assumed in the model.

e. State if and how the provision in Section 7.C.5 of VM-20 allowing conditional exclusion of a portion of an NGE is used.

VM-31 redline

i. If used, is the provision used for any purpose other than recognition of subsidies for participating business.

ii. If this provision is being used, discuss how prevention of double counting of assets is ensured.

f~~k~~. Description of interest crediting strategy.~~.~~

Guidance Note: Examples of considerations include (1) if the subsidy is provided by a downstream company, and the carrying value of the downstream company is reported as an asset on the company's books, where is the offsetting liability reported; or (2) if the subsidy is provided by another block of business within the company, is the subsidy included in cash flow testing of the "other block"?

10~~1~~. The following information regarding the deterministic and stochastic exclusion tests, if calculated:

a. Identification and description of each group of policies used in the deterministic and stochastic exclusion tests including contract type and risk profile, and rationale for each grouping of policies.

b. For each group of policies for which the company elects to exclude from stochastic reserve requirements, the stochastic exclusion test used (passing the stochastic exclusion ratio test, stochastic exclusion demonstration test, or certification that the group of policies does not contain material interest, tail or asset risk).

c. For groups of policies for which the stochastic reserve exclusion ratio test is used, results of the 16 scenarios and the test ratio.

d. For groups of policies for which the stochastic reserve demonstration method is used, the rationale for using the demonstration method and a demonstration supporting the exclusion in the initial exclusion year and at least once every three calendar years subsequent to the initial exclusion that complies with the following

i. The demonstration shall take into account whether changing conditions over the current and two subsequent calendar years would be likely to change the conclusion to exclude the group of policies from the stochastic modeling requirement. If, as of the end of any calendar year, the company determines the ~~modified~~ minimum ~~deterministic~~ reserve for the group of policies no longer adequately provides for all material risks, the exclusion shall be discontinued and the policies shall be included in the stochastic modeling calculations.

ii. The demonstration may be based on analysis from a date that proceeds the initial or subsequent exclusion period.

iii. The demonstration shall provide a reasonable assurance that the stochastic reserve calculated on a standalone basis for only those policies subject to the stochastic modeling exclusion would not be greater than the ~~modified~~ minimum ~~deterministic~~ reserve for such policies.

iv. The demonstration shall provide an effective evaluation of the residual risk exposure resulting from risk mitigation techniques such as derivative programs and reinsurance.

Guidance Note: Examples of acceptable methods to demonstrate that the exclusion requirements are met for a group of policies include, but are not limited to:

VM-31 redline

(a) –Demonstrate that the greater of the deterministic reserve and the net premium reserve, less any associated deferred premium asset is greater than the stochastic reserve calculated on a standalone basis.

(b) –Demonstrate that the greater of (1) the net premium reserve less any associated premium asset and (2) the deterministic reserve is greater than the scenario reserve that results from each of a sufficient number of adverse deterministic scenarios.

(c) Demonstrate that the greater of (1) the net premium reserve less any associated premium asset and (2) the deterministic reserve is greater than the stochastic reserve calculated on a standalone basis, but using a representative sample of policies in the stochastic modeling calculations.

(d) Demonstrate that any risk characteristics that would otherwise cause the stochastic reserve calculated on a standalone basis to exceed the greater of (1) the net premium reserve less any associated premium asset and (2) the deterministic reserve are not present or have been substantially eliminated through actions such as hedging, investment strategy, reinsurance, or passing the risk on to the policyholder by contract provision.

e. For groups of policies for which the certification method is used, support for the certification including supporting analysis and tests.

f. For groups of policies that pass the stochastic exclusion test and for which the company chooses not to calculate stochastic reserves, the results of the deterministic exclusion test for each group of policies.

11~~2~~. The following additional information:

a. The impact of individual margins on the deterministic reserve for each risk factor, or group of risk factors, that has a material impact on the deterministic reserve determined for each model segment by subtracting (i) from (ii)

i. The deterministic reserve for all policies, but with the reserve calculated based on the anticipated experience assumption for the risk factor and prudent estimate assumptions for all other risk factors.

ii. The deterministic reserve as reported.

b. An estimate of the aggregate impact of all margins on the deterministic reserve for each model segment. This shall be determined for each model segment by subtracting (i) from (ii)

i. The deterministic reserve for all policies, but with the reserve calculated based on anticipated experience assumptions for all risk factors prior to the addition of any margins.

ii. The deterministic reserves for all policies as reported.

c. For purposes of the disclosures required in 12a and 12b above

i. If the company believes the method used to determine anticipated experience mortality assumptions includes an implicit margin, the company can adjust the anticipated experience assumptions to remove this implicit margin. For example, to the extent the company expects mortality improvement after the valuation date, any such mortality improvement is an implicit margin and therefore is an acceptable adjustment to the anticipated experience assumptions for this purpose. If any such adjustment is made, the company shall document the rationale and method used to determine the anticipated experience assumption.

VM-31 redline

ii. Since the company is not required to determine an anticipated experience assumption or a prudent estimate assumption for risk factors that are prescribed for the deterministic reserve (i.e., interest rates movements, equity performance, default costs, and net spreads on reinvestment assets), when determining the impact of margins, the prescribed assumption shall be deemed to be the prudent estimate assumption for the risk factor, and the company can elect to determine an anticipated experience assumption for the risk factor, based on the company's anticipated experience for the risk factor. If this is elected, the company shall document the rationale and method used to determine the anticipated experience assumption. If the mortality segments do not qualify for the simplified method to determine prudent estimate mortality assumptions, the anticipated experience assumption for mortality is the credibility adjusted experience rates.

d. An explanation of how the results of sensitivity tests and varying assumptions were used or considered in developing assumptions including a description of, results of, and action taken with respect to sensitivity tests performed.

e. Description of material risks not fully reflected in cash flow model used to calculate the stochastic reserve including:

i. A description of each element of the cash flow model for which this provision has been made in the stochastic reserve (e.g., risk factors, policy benefits, asset classes, investment strategies, risk mitigation strategies, etc.).

ii. A description of the approach used by the company to provide for these risks in the stochastic reserve outside the cash flow model, and a summary of the rationale for selecting this approach, and the key assumptions justifying the underlying approach.

iii. If there is more than one model element included in this provision, clarifying whether a separate provision was determined for each element, or collectively for groups of two or more elements and explaining the methodology, supporting rationale and key assumptions for how separate provisions were combined.

f. Summary of the impact of aggregation on the stochastic reserve

~~i. At least once every three (3) years, and in the current year regardless of the three (3) year requirement if the company has made a material change in its risk profile, such as buying or selling a block of business, or entering into a reinsurance arrangement covering the policies subject to these requirements, a company shall disclose the stochastic reserve for each product on a standalone basis listed in the table in Section 3.C.3 and disclose the sum of the stochastic reserves for each product less the sum of the minimum reserves for the products.~~

~~ii. With respect to above disclosure, the company shall disclose the nature of any approximations used and the rationale for why the approximations are appropriate.~~

g. If the company uses a date that precedes the valuation date to calculate the reserves, the company shall explain why the use of such date will not produce a material change in the results if the results were based on the valuation date. Such explanation shall describe the process the actuary used to determine the adjustment, the amount of the adjustment, ~~address the nature of any adjustments made to the data~~ and the rationale for why the adjustments are appropriate.

h. Description of any approximations, and simplifications, used in reserve calculations

VM-31 redline

~~. i. Competitor rate definition and usage.~~

~~j. Description of method to translate stochastic economic paths into fund performance.~~

~~k. Description of interest crediting strategy.~~

12~~3~~. Certifications

a. A certification from a duly authorized investment officer that the modeled asset investment strategy is consistent with the company's current investment strategy and an actuarial certification regarding the modeling of clearly defined hedging strategies.

b. A certification from senior management certifying that the principle-based valuation complies with VM-G (Corporate Governance Guidance for Principle-Based Reserves).

c. Certification of stochastic modeling exclusion test, if applicable.

F. PBR Actuarial Report Requirements for Variable Annuity Contracts

Drafting Note: See documentation and reporting requirements in VM-21

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

Steve Clayburn – ACLI – Suggested Changes to VM-25

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:

Please see Attachment A, which is the original exposure by HATF, soliciting comments on that proposal to change VM-25. The exposure would delete the current language in VM-25 and replace it with that wording as modified.

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 Attachment A. Taking the exposed language, this proposal modifies the exposure as possible language to be in VM-25.

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

The Valuation Manual is effective January 1, 2017. The proposed changes to VM-25 will help for a smoother transition for most states as it will now point to updated reserve requirements.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

W:\National Meetings\2010\...\TF\LHA\

Attachment A

Original Exposure by HATF

Proposed VM-25 Language to Address Health Reserve Requirements

"Reserve requirements for individual accident and health insurance policies issued on and after the valuation manual operative date and reserve requirements for group accident and health insurance certificates issued on and after the valuation manual operative date are found in the Accounting Practices and Procedures Manual (APPM), Appendix A, A-10, and in Appendix C, AG47 and AG__."

In addition to providing comment on the proposed language, please refer to the APPM table of contents provided with the exposure notice and provide comment on

1) Whether the yellow-highlighted items should also be referenced in the proposed language ; and

2) Which additional Appendix A and Appendix C table of contents items should also be referenced in the proposed language.

APF Proposed VM-25 Language (Based on ACLI Comment Letter dated March 11th)

"Reserve requirements for individual accident and health insurance policies issued on and after the valuation manual operative date and reserve requirements for group accident and health insurance certificates issued on and after the valuation manual operative date are applicable requirements found in the Accounting Practices and Procedures Manual (APPM), Appendix A, which includes A-10, and applicable requirements found in the APPM Appendix C, which includes ~~Appendix C,~~ AG28, AG44, AG47 and AG50."

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Valuation Manual Review 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:

   Valuation Manual – Introductions – Governance

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.)

   CORPORATE GOVERNANCE REQUIREMENTS FOR PRINCIPLE-BASED RESERVES
   The requirements found in VM-Appendix G (VM-G) provide corporate governance requirements applicable to policies or contracts subject to a principle-based reserve valuation as specified in this Valuation Manual.

   -

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

   Business subject to AG-43 is issued prior to 1/1/17. Section 2A(2) of the SVL provides the provisions of SVL, Section 12, shall not apply to policies issued prior to the VM operative date. This includes the governance requirements in Section 12.

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Exposure of the Amendment Proposal Consolidating the ACLI and Academy Revisions to VM-G

Exposed for comment through June 3, 2016
Re-exposed for comment through June 22, 2016

Send comments to Reggie Mazyck
(RMazyck@NAIC.ORG)

VM-G APPENDIX G CORPORATE GOVERNANCE GUIDANCE FOR PRINCIPLE-BASED RESERVES

Table of Contents

Section 1. INTRODUCTION, DEFINITIONS AND SCOPE

A. A principle-based approach to the calculation of reserves places the responsibility for actuarial and financial assumptions with respect to the determination of sufficient reserves on individual companies, as compared with reserves determined strictly according to formulas prescribed by regulators. This responsibility requires that sufficient measures are established for oversight of the function related to principle-based reserve valuations.

The corporate governance guidance provided in VM-G is applicable only to a principle-based reserve valuation calculated according to methods defined in VM-20 and VM-21.

Guidance Note : Given requirements in AG43 are intended to be the same as those in VM-21, if a company chooses to aggregate business subject to AG 43 with business subject to VM-21 in calculating the reserve then the provisions in VM-G apply to this aggregate principle-based reserve valuation.

B. In carrying out the responsibility described in subsection A above for each group of policies and contracts subject to Section 12 of VM-05, *NAIC Model Standard Valuation Law*, the company shall assign to one or more qualified actuaries the responsibilities indicated in Sections 4.A.

C. For the purposes of VM-G:

1. The term "group of insurance companies" means a set of insurance companies in a holding company system (for purposes of applicable insurance holding company system acts) that is designated as a group of insurance companies by the senior management of any holding company that is a holding company of all the insurance companies in such set of insurance companies;

2. The terms "board" and "board of directors" mean (a) the board of an insurance company that has not been designated to be part of a group of insurance companies, or (b) the board of a single company within a group of insurance companies that is designated by the senior management of any holding company of all the insurance companies in such group of insurance companies, or a committee of such board, consisting of members of such board, duly appointed by such board and authorized by such board to perform functions substantially similar to those described in this section; and

Guidance Note: The group of companies is a group of life insurers designated by senior management for purposes of managing the PBR process, and the Board is the appropriate Board responsible for those companies.

3. The term "senior management" includes the highest ranking officers of an insurance company or group of insurance companies with responsibilities for operating results, risk assessment, and financial reporting (e.g., the chief executive officer, chief financial officer, chief actuary, and chief risk officer) and such other senior officers as may be designated by the insurance company or group of insurance companies.

D. Sections 2 and 3 below, while not expanding the existing legal duties of a company's board of directors and senior management, provides guidance on their roles in the context of principle-based reserve valuations.

While existing governance standards encompass adequate and appropriate standards for oversight of principle-based reserve valuations, Sections 2 and 3 below describe guidance for the roles of the board of directors and senior management, in light of their existing duties as applied in the context of principle-based reserves. It is not intended to create new duties but rather to emphasize and clarify how their duties apply to the principle-based reserves actuarial

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Deleted: The term "principle-based valuation" means a reserve valuation that uses one or more methods or one or more assumptions determined by the insurer and is required to comply with Section 12 of the Standard Valuation Law (VM-05) as specified in this Valuation Manual. ¶

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valuation function of an insurance company or group of insurance companies. To the extent that any law or regulation conflicts with the guidance described herein, such other law or regulation shall prevail, and the conflicting parts of this section VM-G shall not apply.

Section 2. GUIDANCE FOR THE BOARD

A. Commensurate with the materiality of principle-based reserves in relationship to the overall risks borne by the insurance company, and consistent with its oversight role, the board is responsible for:

1. Overseeing the process undertaken by senior management to identify, and correct where needed, any material weakness in the internal controls of the insurance company or group of insurance companies with respect to a principle-based reserve valuation;

2. Overseeing the infrastructure (consisting of policies, procedures, controls and resources) in place to implement principle-based reserve valuation processes;

3. Receiving and reviewing the reports and certifications referenced in Section 3.A.6;

4. Interacting with senior management to resolve questions and collect additional information as the board requests; and

5. Documenting the review and actions undertaken by the board, relating to the principle-based reserve valuation function, in the minutes of all board meetings where such function is discussed.

Section 3. GUIDANCE FOR SENIOR MANAGEMENT

A. Senior management is responsible for directing the implementation and ongoing operation of the principle-based valuation function. This includes:

1. Ensuring that an adequate infrastructure (consisting of the policies, procedures, controls, and resources) has been established to implement the principle-based reserve valuation function;

2. Reviewing the elements of the principle-based reserve valuation (consisting of the assumptions, methods, and models used to determine principle-based reserves of the insurance company or group of insurance companies) that have been put in place, and whether these elements of the principle-based reserve valuation appear to be consistent with, but not necessarily identical to, those for other company risk assessment processes, while recognizing potential differences in financial reporting structures and any prescribed assumptions or methods;

3. Reviewing and addressing any significant and unusual issues and/or findings in light of the results of the principle-based reserve valuation processes and applicable sensitivity tests of the insurance company or group of insurance companies;

4. Ensuring the adoption of internal controls with respect to the principle-based reserve valuations of the insurance company or group of insurance companies that are designed to provide reasonable assurance that all material risks inherent in the liabilities and assets subject to such valuations are included, and that such valuations are made in accordance with the Valuation Manual and regulatory requirements and actuarial standards. Senior management is responsible for ensuring that an annual evaluation is made of such internal controls and for communicating the results of that evaluation to the board of directors;

5. Determining that:

   a. Resources are adequate to carry out the modeling function with skill and competence;

   b. A process exists that ensures that models and procedures produce the intended results relative to the principle-based valuation objectives as outlined in Section 12.A of the Standard Valuation Law;

Deleted: A. . Consistent with its oversight role, the board is responsible for establishing a process whereby the board: receives and reviews reports, including the certification of the effectiveness of internal controls with respect to the principle-based calculation, as provided in section 12.B.(2) of the Standard Valuation Law; interacts with senior management to resolve questions and collect additional information as needed; and determines what additional steps or direction, if any, are necessary to rely on the principle-based reserving and valuation functions established by senior management.

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c. A process exists that validates data for determination of model input assumptions, other than input assumptions that are prescribed in law, regulation, or the Valuation Manual for use in determining principle-based reserves;

d. A process exists that is appropriately designed to ensure that model input is appropriate given the experience of the insurance company or group of insurance companies, other than model inputs that are prescribed in law, regulation, or the Valuation Manual for use in determining principle-based reserves;

e. A process exists that reviews principle-based reserve valuations to find and limit material errors and material weaknesses (such process (a) to provide a credible ongoing effort to improve model performance where material errors and weaknesses exist, and (b) to include a regular cycle of model validation that includes monitoring of model performance and stability, review of model relationships and testing of model outputs against outcomes); and

f. A review procedure and basis for reliance on principle-based reserve valuation processes has been established that includes consideration of reporting on the adequacy of principle-based reserves, the implementation of policies, reporting and internal controls, and the work of the appointed actuary.

6. Facilitating the board's oversight role by reporting to the board, no less frequently than annually, regarding such matters as:

a. The infrastructure (consisting of the policies, procedures, controls, resources) that senior management has established to support the principle-based reserves valuation function;

b. The critical risk elements of the valuation as applicable, related to the assumptions, methods, and models; and their relationship to those for other risk assessment processes, noting differences in financial reporting structures and any prescribed assumptions or methods;

c. The level of knowledge and experience of senior management personnel responsible for monitoring, controlling and auditing principle-based reserves; and

d. Reports related to governance of principle-based reserves, including: (a) the certification of the effectiveness of internal controls with respect to the principle-based reserve valuation, as provided in section 12.B.(2) of the Standard Valuation Law; and (b) the certification from a duly authorized investment officer that the modeled asset investment strategy is consistent with the company's current investment strategy and the actuarial certification regarding the modeling of clearly defined hedging strategies, as provided in section 3.E.(13) of VM-31.

Section 4. RESPONSIBILITIES OF QUALIFIED ACTUARIES

A. The responsibilities assigned by the company to one or more qualified actuaries with respect to a group of policies or contracts under section 1.B are:

1. The responsibility for overseeing the calculation of principle-based reserves for that group of policies or contracts;

2. The responsibility for verifying that

   a. the assumptions, methods, and models that are used in determining principle-based reserves, and
   b. the company's documented internal standards used in the principle-based reserve valuation processes, the company's documented internal controls and documentation used for such reserves,

appropriately reflect the requirements of the Valuation Manual for that group of policies or contracts. In particular, the qualified actuaries are required to certify that the assumptions used in the principle-based reserve valuation, other than assumptions that are prescribed in the Valuation Manual or by law or regulation, or that pertain to risk factors that are modeled stochastically, are prudent estimates, as defined in VM-01, with appropriate margins. The qualified actuaries are not required to verify the appropriateness of any prescribed assumptions, methods or models but are required to verify that they are being used as required;

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Deleted: the groups of policies and contracts assigned by the company (see Section 1.B.) For each group of policies or contracts so assigned, this responsibility also includes:

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Deleted: Alternate language: Verifying that the assumptions, methods, and models that are used in determining principle-based reserves meet the requirements of this valuation manual, and for ensuring that the models and procedures produce the intended results relative to the principle-based valuation objectives as outlined in Section 12.A of the Standard Valuation Law. The qualified actuary(ies) does (do) not review or approve assumptions or methods that are prescribed in law, regulation, or the Valuation Manual for use in determining principle-based reserves but does confirm that the prescribed assumptions and methods are being used as required.¶

3. The responsibility for providing a summary report to the board and to senior management on the valuation processes used to determine and test principle-based reserves, the principle-based reserve valuation results, the general level of conservatism incorporated into the company's principle-based reserves, the materiality of principle-based reserves in relationship to the overall liabilities of the company, and significant and unusual issues and/or findings;

4. Preparing the PBR Actuarial Report as described in VM-31; and

4. The responsibility for preparing the PBR Actuarial Report with respect to that group of policies or contracts, as described in VM-31; and

5. The responsibility for disclosing to the company's external auditors and regulators any significant unresolved issues regarding the company's principle-based reserves held with respect to that group of policies or contracts.

B. A qualified actuary assigned responsibilities under Section 1.B with respect to a group of policies or contracts may be required to make any certification required by the Valuation Manual, but is not required, except as regards any responsibilities he or she may have as the appointed actuary under VM-30, to opine upon or certify the adequacy of the aggregate reserve for that group of policies or contracts, the company's surplus or the company's future financial condition.

C. The responsibilities of the appointed actuary are described in VM-30.

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Deleted: 5. . Working with the company's internal and external auditors and regulators and is (are) responsible for working with the external auditors, regulators, and company senior management to resolve significant issues regarding the company's principle-based reserves. This includes, but is not limited to, disclosing to such internal and external auditors and regulators any significant unresolved issues regarding the company's principle-based reserves

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Proposed Amendments to VM-20:

Change to the guidance note in subparagraph 7.G.2.b:

b. The company shall map each of the proxy funds defined in Sections 7.J and 7.K to the prescribed fund returns defined in Section 7.G.2.a. This mapping process may involve blending the accumulation factors from two or more of the prescribed fixed income and/or equity returns to create the projected returns for each proxy fund. If a proxy fund cannot be appropriately mapped to some combination of the prescribed returns, the company shall determine an appropriate return and disclose the rationale for determining such return.

Guidance Note: Mapping of the returns on the proxy funds to the prescribed funds returns is left to the judgment of the qualified actuary to whom responsibility for this group of policies is assigned, but the returns so generated must be consistent with the prescribed returns. This does not imply a strict functional relationship between the model parameters for various markets/funds, but it would generally be inappropriate to assume that a market or fund consistently "outperforms" (lower risk, higher expected return relative to the efficient frontier) over the long term.

Change paragraph 9.A.6:

6. The company shall use its own experience, if relevant and credible, to establish an anticipated experience assumption for any risk factor. To the extent that company experience is not available or credible, the company may use industry experience or other data to establish the anticipated experience assumption, making modifications as needed to reflect the circumstances of the company.

a. For risk factors (such as mortality) to which statistical credibility theory may be appropriately applied, the company shall establish anticipated experience assumptions for the risk factor by combining relevant company experience with industry experience data, tables, or other applicable data in a manner that is consistent with credibility theory and accepted actuarial practice.

b. For risk factors (such as premium patterns on flexible premium contracts) that do not lend themselves to the use of statistical credibility theory, and for risk factors (such as the current situation with some lapse assumptions) to which statistical credibility theory can be appropriately applied but cannot currently be applied due to lack of industry data, the company shall establish anticipated experience assumptions in a manner that is consistent with accepted actuarial practice and that reflects any available relevant company experience, any available relevant industry experience, or any other experience data that are available and relevant. Such techniques include:

i. Adopting standard assumptions published by professional, industry or regulatory organizations to the extent they reflect any available relevant company experience or reasonable expectations;

ii. Applying factors to relevant industry experience tables or other relevant data to reflect any available relevant company experience and differences in expected experience from that underlying the base tables or data due to differences between the risk characteristics of the company experience and the risk characteristics of the experience underlying the base tables or data;

iii. Blending any available relevant company experience with any available relevant industry experience and/or other applicable data using weightings established in a manner that is consistent with accepted actuarial practice and that reflects the risk characteristics of the underlying policies and/or company practices.

c. For risk factors that have limited or no experience or other applicable data to draw upon, the assumptions shall be established using sound actuarial judgment and the most relevant data available, if such data exists.

d. For any assumption that is set in accordance with the requirements of Section 9.A.6.c, the qualified actuary to whom responsibility for this group of policies is assigned shall use sensitivity testing and disclose the analysis performed to ensure that the assumption is set at the conservative end of the plausible range.

The qualified actuary to whom responsibility for this group of policies is assigned shall annually review relevant emerging experience for the purpose of assessing the appropriateness of the anticipated experience assumption. If the results of statistical or other testing indicate that previously anticipated experience for a given factor is inadequate, then the qualified actuary shall set a new, adequate, anticipated experience assumption for the factor.

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Change paragraph 9.G.2:

G. Revenue Sharing Assumptions

1. The company may include income from projected future revenue sharing (as defined in these requirements equals gross revenue sharing income (GRSI)) net of applicable projected expenses (net revenue sharing income) in cash flow projections, if:

a. The GRSI is received by the company;

b. A signed contractual agreement or agreements are in place as of the valuation date and support the current payment of the GRSI; and

c. The GRSI is not already accounted for directly or indirectly as a company asset.

2. For purposes of this section, GRSI is considered to be received by the company if it is paid directly to the company through a contractual agreement with either the entity providing the GRSI or an affiliated company that receives the GRSI. GRSI would also be considered to be received if it is paid to a subsidiary that is owned by the company and if 100% of the statutory income from that subsidiary is reported as statutory income of the company. In this case the company shall assess the likelihood that future GRSI is reduced due to the reported statutory income of the subsidiary being less than future GRSI received.

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Change to paragraph 9.G.7:

7. The qualified actuary to whom responsibility for this group of policies is assigned is responsible for reviewing the revenue sharing agreements that apply to that group of policies, verifying compliance with these requirements, and documenting the rationale for any source of GRSI used in the projections for that group of policies.

Change to paragraph 9.G.8:

8. The amount of net revenue sharing income assumed in a given scenario shall not exceed the sum of (a) and (b), where:

a. Is the contractually guaranteed GRSI, net of applicable expenses, projected under the scenario; and

b. Is the company's estimate of non-contractually guaranteed net revenue sharing income multiplied by the following factors:

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i. 1.0 in the first projection year;

ii. 0.9 in the second projection year;

iii. 0.8 in the third projection year;

iv. 0.7 in the fourth projection year;

v. 0.6 in the fifth projection year;

vi. 0.5 in the sixth and all subsequent projection years. The resulting amount of non-contractually guaranteed net revenue sharing income after application of this factor shall not exceed 0.25% per year on separate account assets in the sixth and all subsequent projection years.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   John Bruins, ACLI – Modifications to Net Premium Reserve requirements
   Valuation Manual Review Group – edits to Section 3

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, April 6, 2016 adopted version, VM-01 and VM-20
   VM-20 Section 3

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.)

   See the following pages

4. State the reason for the proposed amendment? (You may do this through an attachment.)
   Modification to NPR Requirements - consolidates edits and clarifications discussed with LATF on 5/26/16.
   Corrects 6 cross references.
   Replaces "for products without nonforfeiture values" with "term insurance" in two places defining the interest rate to be used in the Net Premium Reserve.
   Modifies the language in Section 3.B.6 related to secondary guarantees.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

VM-01 – Definitions:

56. A "secondary guarantee" is a conditional guarantee that a policy will remain in force for either
a. more than five years (the secondary guarantee period), or

b. five years or less (the secondary guarantee period) if the specified premium for the secondary guarantee period is less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables defined in VM-20 Section 3.C and VM-M and the valuation interest rates defined in this Section, or if the initial surrender charge is less than 100% of the first year annualized specified premium for the secondary guaranteed period,

even if its fund value is exhausted.

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The following is included for reference:

60. The term "universal life insurance policy" means a life insurance policy where separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality and expense charges are made to the policy. A universal life insurance policy may provide for other credits and charges, such as charges for cost of benefits provided by rider.

VM-20 – Definitions:

23. A "secondary guarantee" is a conditional guarantee that a policy will remain in force either
a. more than five years (the secondary guarantee period), or

b. five years or less (the secondary guarantee period) if the specified premium for the secondary guarantee period is less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables defined in VM-20 Section 3.C and VM-Mand the valuation interest rates defined in this Section, or if the initial surrender charge is less than 100% of the first year annualized specified premium for the secondary guaranteed period,

even if its fund value is exhausted.

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The following is included for reference:

27. The term "universal life insurance policy" means a life insurance policy where separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality and expense charges are made to the policy. A universal life insurance policy may provide for other credits and charges, such as charges for cost of benefits provided by rider.

Section 3. Net Premium Reserve

A. Applicability

1. The net premium reserve for each term policy, and for each universal life policy with a secondary guarantee must be determined pursuant to Section 3.

> Guidance Note: When valuing term riders pursuant to Section II, the reserve requirements for term policies are applicable.

2. Except for policies subject to Section 3.A.1, the net premium reserve shall be determined pursuant to applicable methods in VM-A and VM-C for the basic reserve. The mortality tables to be used ar those defined in Section 3.C.1 and in VM-M Section 1.H.

B. For purposes of this Section 3 and Section 6, the following definitions apply:

> Guidance Note: The term "net premium reserve" when used in subsections B – D means the pre-reinsurance net premium reserve. Elsewhere in VM-20, "net premium reserve" means the post-reinsurance net premium reserve.

1. The "fully funded secondary guarantee**"** at any time is:
   a. For a shadow account secondary guarantee, the minimum shadow account fund value necessary to fully fund the secondary guarantee for the policy at that time.
   b. For a cumulative premium secondary guarantee, the amount of cumulative premiums required to have been paid to that time that would result in no future premium requirements to fully fund the guarantee, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.
2. The "actual secondary guarantee**"** at any time is:
   a. For a shadow account secondary guarantee, the actual shadow account fund value at that time.
   b. For a cumulative premium secondary guarantee, the actual premiums paid to that point in time, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.
3. The "level secondary guarantee" at any time is:
   a. For a shadow account secondary guarantee, the shadow account fund value at that time assuming payment of the level gross premium determined according to Subsection 3.B.6.c.i.
   b. For a cumulative premium secondary guarantee, the amount of cumulative level gross premiums determined according to Section 3.B.6.c.i, accumulated with any interest or accumulation factors per the contract provisions for the secondary guarantee.

> **Guidance Note:** The definition of the net premium reserve in subsections 4, 5 and 6 is intended to result in a terminal net premium reserve under the assumption of an annual mode gross premium. The gross premium referenced should be the gross premium for the policy assuming an annual premium mode. The reported reserve as of any valuation date should reflect the actual premium mode for the policy and the actual valuation date relative to the policy issue date either directly or through adjusting accounting entries.

4. For all term policies on any valuation date the net premium reserve shall be equal to the actuarial present value of future benefits less the actuarial present value of future annual valuation net premiums as follows:
   a. The annual valuation net premiums shall be a uniform percent of the respective adjusted gross premiums, described in Section 3.B.4.b, such that at issue the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits plus an amount equal to $2.50 per $1,000 of insurance for the first policy year only.

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Guidance Note: When calculating the present values under Section 3.B.4.a.ii and 3.B.4.a.iii, benefits and premiums during the years following the end of the level term period should be projected assuming that the policies subject to the shock lapse in each year do not pay the higher premium in that year.

i. For policies subject to the shock lapse provisions of Section 3.C.3.b.v, valuation net premiums for policy years after the shock lapse shall be limited and may result in two uniform percentages, one applicable to policy years prior to the shock lapse and one applicable to policy years following the shock lapse. For these policies, these percentages shall be determined as follows:

ii. Compute the actuarial present value of benefits for policy years following the shock lapse.

iii. Compute the actuarial present value of valuation net premiums for policy years following the shock lapse.

iv. If iii/ii is greater than 135%, reduce the net valuation premiums in iii uniformly to produce a ratio of iii/ii of 135%.

v. If the application of iv produces an adjustment to the net valuation premiums following the shock lapse, increase the net valuation premiums for policy years prior to the shock lapse by a uniform percentage such that at issue the actuarial present value of future valuation net premiums equals the actuarial present value of future benefits plus $2.50 per $1,000 of insurance for the first policy year only.

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b. Adjusted gross premiums shall be determined as follows:

i. The adjusted gross premium for the first policy year shall be set at zero.

ii. The adjusted gross premium for any year from the second through fifth policy year shall be set at 90% of the corresponding gross premium for that policy year.

iii. The adjusted gross premium for any year after the fifth policy year shall be set equal to the corresponding gross premium for that policy year.

c. The gross premium in any policy year is the maximum guaranteed gross premium for that policy year.

d. Actuarial present values are calculated using the interest, mortality, and lapse assumptions prescribed in Section 3.C.

5. For any universal life policy with a secondary guarantee, a reserve shall be determined by the policy features and guarantees of the policy without considering any secondary guarantee provisions. The net premium reserve shall be calculated as follows:

a. Determine the level gross premium at issue, assuming payments are made each year for which premiums are permitted to be paid, such period defined as "s" in this Subsection, that would keep the policy in force for the entire period coverage is to be provided based on the policy guarantees of mortality, interest and expenses.

b. Using the level gross premium from Section 3.B.5.a, determine the value of the expense allowance components for the policy at issue as x_1, $y_{2\text{-}5}$, and z defined below.

x_1 = a first year expense equal to the level gross premium at issue

$y_{2\text{-}5}$ = an expense equal to 10% of the level gross premium and applied in each year from the second through fifth policy year

z_1 = a first year expense of $2.50 per $1,000 of insurance issued

The expense allowance balance, E_{x+t}, shall be calculated as follows over the period for which premiums are permitted to be paid:

$$E_{x+t} = VNPR \bullet \ddot{a}_{x+t:\overline{s-t}|}\left[(x_1 + z_1)/\ddot{a}_{x:\overline{s}|} + y_{2-5} \bullet C_{x+t}\right] \qquad \text{for } t < s$$

$$= 0 \qquad \text{for } t \geq s$$

Where:

$$VNPR = Valuation\ Net\ Premium\ Ratio\ from\ 3.B.5.c.$$

$$C_{x+t} = 0 \qquad \text{when } t = 1$$

$$= \sum_{w=1}^{t-1}\left(1/\ddot{a}_{x+w:\overline{s-w}|}\right) \qquad \text{when } 2 \leq t \leq 5$$

$$= C_{x+5} \qquad \text{when } t > 5$$

c. Determine the annual valuation net premiums as that uniform percentage (the valuation net premium ratio) of the respective gross premiums, such that at issue the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits.

d. For a policy issued at age *x,* on any valuation date *t*, the net premium reserve shall equal:

$m_{x+t} \bullet r_{x+t}$ where:

i. m_{x+t} = the actuarial present value of future benefits less the actuarial present value of future valuation net premiums and less the unamortized expense allowance for the policy, E_{x+t} ,

ii. r_{x+t} = the ratio e_{x+t}/f_{x+t} , but not greater than 1, with (e_{x+t}) and (f_{x+t}) defined as below:

e_{x+t} = the actual policy fund value on the valuation date *t*

f_{x+t} = The policy fund value on the valuation date *t* is that amount which, together with the payment of the future level gross premiums determined in subsection 3.B.5.a above, keeps the policy in force for the entire period coverage is to be provided, based on the policy guarantees of mortality, interest and expenses.

e. The future benefits used in determining the value of m_{x+t} shall be based on the greater of e_{x+t} and f_{x+t} together with the future payment of the level gross premiums determined in subsection 3.B.5.a above, and assuming the policy guarantees of mortality, interest and expenses.

f. The values of $\ddot{a}$ are determined using the net premium reserve interest, mortality and lapse assumptions applicable on the valuation date.

g. Actuarial present values referenced in this subsection 3.B.5 are calculated using the interest, mortality, and lapse assumptions prescribed in Subsection C of this section.

6. For any universal life policy with a secondary guarantee, during the secondary guarantee period the net premium reserve shall be the greater of the reserve amount determined according to subsection 3.B.5, assuming the policy has no secondary guarantees, and the reserve amount for the policy determined according to the methodology and requirements subsections 3.B.6.b through 3.B.6.e below.

a. After the expiration of the secondary guarantee period, the net premium reserve shall be the net premium reserve determined according to subsection 3.B.5 only.

b. If the policy has multiple secondary guarantees, the net premium reserve shall be calculated as below for the secondary guarantee that provides the longest period for which the policy can remain in force under the provisions of the secondary guarantee, such period defined as "n" in this Subsection. The resulting net premium reserve shall be used in the comparison with the net premium reserve calculated in accordance with Subsection 3.B.5.

c. As of the policy issue date:

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Deleted: period is more than five years, or if less than five years, specified premium for the secondary guarantee period is less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables as defined in VM-20 Section 3.C and VM-M, or the applicable valuation interest rate; and the initial surrender charge is less than 100% of the first year annualized specified premium for the secondary guarantee period.

i. Determine the level gross premium at issue, assuming payments are made each year for which premiums are permitted to be paid, such period defined as "v" in this Subsection, that would keep the policy in force to the end of the secondary guarantee period, based on policy provisions, including the secondary guarantee provisions, such as mortality, interest and expenses. In no event shall "v" be greater than "n" for purposes of the net premium reserve calculated in this Subsection.

ii. Using the level gross premium from subsection 3.B.6.c.i above, determine the value of the expense allowance components for the policy at issue as x_1 , y_{2-5}, and z_1 defined below.

x_1= a first year expense equal to the level gross premium at issue

y_{2-5}= an expense equal to 10% of the level gross premium and applied in each year from the second through fifth policy year

z_1= a first year expense of $2.50 per $1,000 of insurance issued

The expense allowance, E_{x-t}, shall be amortized as follows over the period for which premium are permitted to be paid:

$$E_{x+t} = VNPR * \ddot{a}_{x+t:\overline{v-t}|}\left[(x_1 + z_1)/\ddot{a}_{x:\overline{v}|} + y_{2-5} \bullet C_{x+t}\right] \quad \text{for } t < v$$

$$= 0 \quad \text{for } t \geq v$$

Where:

VNPR = Valuation Net Premium Ratio from 3.B.6.c.iii

$C_{x+t} = 0$ when t = 1

$=\sum_{w=1}^{t-1}(1/\ddot{a}_{x+w:\overline{v-w}|})$ when 2≤ t ≤5

$= C_{x+5}$ when t>5

iii. Determine the annual valuation net premiums at issue as that uniform percentage (the valuation net premium ratio) of the respective gross premiums such that at issue and over the secondary guarantee period the actuarial present value of future valuation net premiums shall equal the actuarial present value of future benefits. The valuation net premium ratio determined shall not change for the policy.

d. After the policy issue date, on each future valuation date, *t*, the net premium reserve shall be determined as follows:

i. For policies utilizing a cumulative premium secondary guarantee, determination should be made, per the policy provisions for the secondary guarantee, of the actual secondary guarantee as of the valuation date, ASG_{x+t}, as defined in 3.B.2.b, and the fully funded secondary guarantee, $FFSG_{x+t}$, as defined in 3.B.1.b.

ii. As of the valuation date for the policy being valued, for policies utilizing shadow accounts, determine the amount of actual secondary guarantee as of the valuation date, ASG_{x+t}, , as defined in 3.B.2.a and the minimum amount of shadow account required to fully fund the guarantee, $FFSG_{x+t}$, as defined in 3.B.1.a. For any policy for which the secondary guarantee cannot be fully funded in advance, solve for the minimum sum of any possible excess funding and the present value of future premiums (using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves) that would fully fund the guarantee. Divide ASGx+t by FFSGx+t with the resulting ratio capped at 1.00. The ratio is intended to measure the level of prefunding for a secondary guarantee which is used to establish reserves. Assumptions within the numerator and denominator of the ratio therefore must be consistent in order to appropriately reflect the level of prefunding. As used here, "assumptions" include any factor or value, whether assumed or known, which is used to calculate the numerator or denominator of the ratio.

iii. Compute the net single premium (NSP_{x+t}) on the valuation date for the coverage provided by the

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Deleted: (either the amount in the shadow account or excess cumulative premium payments depending on the product design)

Comment [RGM2]: This need to be changed when doing the final VM update.

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secondary guarantee for the remainder of the secondary guarantee period, using the interest, lapse and mortality assumptions prescribed in Subsection C of this section. The net single premium shall include consideration for death benefits only.

iv. The net premium reserve for an insured age x at issue at time t shall be according to the formula below:

$$Min\left[\frac{ASG_{x+t}}{FFSG_{x+t}}, 1\right] \bullet NSP_{x+t} - E_{x+t}$$

e. Actuarial present values referenced in this subsection B.6 are calculated using the interest, mortality and lapse assumptions prescribed in Subsection C of this section.

7. The actuarial present value of future benefits equals the present value of future benefits including, but not limited to, death, endowment (including endowments intermediate to the term of coverage), and cash surrender benefits. Future benefits are before reinsurance and before netting the repayment of any policy loans.

C. Net Premium Reserve Assumptions

1. Mortality Rates

a. Except as indicated in subsection 3.C.1.b, and subject to the conditions outlined for reserves in VM-A-814 and A-815 in Appendix A of this manual, the mortality standard used in determining the present values described in Subsection B of this Section shall be the 2001 Commissioners Standard Ordinary (CSO) Mortality Table as defined in VM-M Section 1.G. of this manual..

b. Subject to the conditions defined in 3.C.1.c., the 2017 Commisioners' Standard Ordinary Mortality Tables as defined in VM-M Section 1.H. is required as the valuation standard for Ordinary Life policies issued on or after January 1, 2020 and subject to this Section. A company may elect to apply this table to determine minimum reserve standards to one or more plans of insurance for policies issued on or after January 1, 2017.

c. Conditions for application of the 2017 CSO:

i. For each plan of insurance with separate rates for smokers and nonsmokers, an insurer may use:

(a) Composite mortality tables to determine minimum reserve liabilities; or

(b) Smoker and nonsmoker mortality to determine minimum reserve liabilities if nonforfeiture values are also determined using smoker and nonsmoker mortality.

ii. For plans of insurance without separate rates for smokers and nonsmokers, the composite mortality tables shall be used.

iii. For the purpose of determining minimum reserve values and amounts of paid-up nonforfeiture benefits, the 2017 CSO Mortality Table may, at the option of the company for each plan of insurance, be used in its ultimate or select and ultimate form.

iv. Gender-Blended Tables shall apply in the following circumstances:

For any ordinary life insurance policy delivered or issued for delivery that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a morality table that is a blend of the 2017 CSO Mortality Table (M) and the 2017 CSO Mortality Table (F) may, at the option of the company for each plan of insurance, be used in determining minimum reserves.

d. At the election of the company, for any one or more specified plans of insurance and subject to satisfying the conditions stated in 3.C.1.e., the 2017 CSO Preferred Class Structure Mortality Table may be substituted in place of the 2017 CSO Smoker or Nonsmoker Mortality Table as the minimum valuation standard for policies issued on or after January 1, 2017.

e. Conditions for preferred structure tables:

i. For each plan of insurance with separate rates for preferred and standard nonsmoker lives, an insurer may use the super preferred nonsmoker, preferred nonsmoker, and residual standard nonsmoker tables to substitute for the nonsmoker mortality table found in the 2017 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, except for business valued under the residual standard nonsmoker table, the appointed actuary shall certify that:

(a) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

(b) The present value of death benefits over the future life of the contracts, using anticipated morality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.

ii. For each plan of insurance with separate rates for preferred and standard smoker lives, an insurer may use the preferred smoker and residual standard smoker tables to substitute for the smoker mortality table found in the 2017 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, for business valued under the preferred smoker table, the appointed actuary shall certify that:

(a) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the preferred smoker valuation basic table corresponding to the valuation table being used for that class.

(b) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the preferred smoker valuation basic table.

iii. Selection of the proper set of mortality rates when a company chooses to use a permitted preferred class structure mortality table shall be subject to actuarial guideline XLII and applied to the 2017 CSO consistently with the 2001 CSO.

Guidance Note: The Valuation Manual can be updated by the NAIC to define a new valuation table. Because of the various implications to systems, form filings, and related issues (such as product tax issues), lead time is needed to implement new requirements without market disruption. It is recommended that this transition be for a period of about 4.5 years—that is, that the table be adopted by July 1 of a given year, that it be permitted to be used starting Jan. 1 of the second following calendar year, that it be optional until Jan. 1 of the fifth following calendar year, thereafter mandatory. It is further intended that the adoption of such tables would apply to all business issued since the adoption of this Valuation Manual. The details of how to implement any unlocking of mortality tables will need to be addressed in the future.

2. Interest Rates

Guidance Note: This section describing the determination of the "calendar year net premium reserve interest rate" is intended to communicate that, unlike the "unlocking" of the net premium reserve mortality and lapse assumptions, the interest rate used in the net premium reserve calculation for a block of policies issued in a particular calendar year does not change for the duration of each of the policies in that issue year block.

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a. For net premium reserve amounts calculated according to Section 3.B.5:

The calendar year net premium reserve interest rate *I* shall be determined according to this subsection 3.C.2.a and the results rounded to the nearest one-quarter of one percent (1/4 of 1%). This rate shall be used in determining the present values described in Ssection 3.B.5 for all policies issued in the calendar year next following its determination.

i. $I = .03 + W * (R_1 - .03) + (W/2) * (R_2 - .09)$

Where: R_1 is the lesser of *R* and .09

R_2 is the greater of *R* and .09

R is the reference interest rate defined in Subsection 2.a.ii. below

W is the weighting factor for a policy, as defined in Subsection 2.a.iii. below

However, if the calendar year net premium reserve interest rate *I* in any calendar year determined without reference to this sentence differs from the corresponding actual rate for the immediately preceding calendar year by less than one-half of one percent (1/2 of 1%), the calendar year net premium reserve interest rate shall be set equal to the corresponding actual rate for the immediately preceding calendar year.

ii. The reference interest rate *R* for a calendar year shall equal the lesser of the average over a period of 36 months and the average over a period of l2 months, ending on June 30 of the calendar year preceding the year of issue, of the monthly average of the composite yield on seasoned corporate bonds, as published by Moody's Investors Service, Inc.

iii. The weighting factor *W* for a policy shall be determined from the table below:

Guarantee Duration (Years)	Weighting Factor
10 or less	.50
More than 10 but not more than 20	.45
More than 20	.35

The guarantee duration for the coverage guarantee is the maximum number of years the life insurance can remain in force on the basis guaranteed in the policy or under options to convert to plans of life insurance with premium rates or nonforfeiture values or both which are guaranteed in the original policy.

b For net premium reserve amounts calculated according to Section 3.B.4 or 3.B.6:

The calendar year net premium reserve interest rate shall be calculated by increasing the rate determined according to Subsections 3.C.2.a above by 1.5%, but in no event greater than 125% of the rate determined according to Subsection 3.C.2.a above rounded to the nearer one-quarter of one percent (1/4 of 1%).

Guidance **Note:** If a policy contains multiple coverage guarantees and each coverage guarantee stream is valued separately, it may be important to define which reserve interest rate(s) should be used for reporting and analysis purposes.

3. Lapse Rates

a. For net premium reserve amounts calculated according to Section 3.B.5, the lapse rates used shall be 0% per year during the premium paying period and 0% per year thereafter.

Deleted: i. . Section 3.B.5 4 for policies and riders other than term policies or ridersfor which nonforfeiture benefits are provided; or ¶
¶
ii. . Section 3.B.65.¶

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¶
ii. . Section 3.B.76 of this Section.¶

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Deleted: policies other than universal life policies or riders which provide nonforfeiture values, universal life policies not containing a secondary guarantee, and universal life policies for which the longest secondary guarantee period is five years or less

Deleted: in determining the present values described in subsection 3.B

b. For net premium reserve amounts calculated according to Section 3.B.4, the annual lapse rates used shall vary by level premium period as stated below:

i. 10% per year during any level premium period of less than five years, except as noted in iii and iv.

ii. 6% per year during any level premium period of five or more years, except as noted in iii and iv.

iii. For any policy with values subject to the requirements of Actuarial Guideline XLV {AG-45 in Appendix C of the Accounting Practices and Procedures Manual} the annual lapse rate is 6% for the first half of the initial level premium period, and 0% for the remainder of the initial level premium period

iv. 10% per year during any premium paying period after an initial level premium period of less than five years.

v. The lapse rate for the first year following a rate increase shall be determined based on the length of the level premium periods before and after the increase as well as the percent increase in the gross premium as shown in the table below instead of what would otherwise apply from i through iv above.

Length of Premium Period Prior to Increase	Length of Premium Period after Increase	Percent Increase in Gross Premium Per $1000	Lapse for the Year After Premium Increase (Shock Lapse)
1<PP≤5	1	Any	50%
1<PP≤5	1<PP	Any	25%
5<PP≤10	1	< 400%	70%
5<PP≤10	1	Over 400%	80%
5<PP≤10	1<PP≤5	Any	50%
5<PP≤10	5<PP	Any	25%
10<PP	1	< 400%	70%
10<PP	1	Over 400%	80%
10<PP	1<PP≤5	Any	70%
10<PP	5<PP≤10	Any	50%
10<PP	10<PP	Any	50%

c. For net premium reserve amounts calculated according to Section 3.B.6, the lapse rate, L_{x+t}, used at time *t* for an insured age *x* at issue shall be determined as follows:

i. Determine the ratio R_{x+t} where:

$$R_{x+t} = [FFSG_{x+t} - ASG_{x+t}] / [FFSG_{x+t} - LSG_{x+t}]$$ but not > 1 and not < 0

Where:

$FFSG_{x+t}$ = the fully funded secondary guarantee at time *t* for the insured age *x* at issue

ASG_{x+t} = the actual secondary guarantee at time *t* for the insured age *x* at issue

Deleted: policies other than universal life policies or riders which provide no nonforfeiture values (i.e., term policies)

Deleted: to determine the present values described in subsection 3.B

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Deleted: universal life policies, for which the longest secondary guarantee period is more than five years

Deleted: to determine the present values described in Subsection B

LSG_{x+t} = the level secondary guarantee at time t for the insured age x at issue

ii. The lapse rate for the policy for durations $t+1$ and later shall be set equal to:

$$L_{x+t} = R_{x+t} \bullet 0.01 + (1 - R_{x+t}) \bullet 0.005 \bullet r_{x+t}$$

Where r_{x+t} is the ratio determined in Subsection 3.B.5.d.ii.

D. Net Premium Reserve Calculation and Cash Surrender Value Floor

1. For policies other than universal life policies, the net premium reserve shall not be less than the greater of:

   a. The cost of insurance to the next paid to date. The cost of insurance for this purpose shall be determined using the mortality tables for the policy prescribed in subsection 3.C; or

   b. The policy cash surrender value, calculated as of the valuation date and in a manner that is consistent with that used in calculating the net premium reserve on the valuation date.

2. For a universal life policy, the net premium reserve shall not be less than the greater of:

   a. The amount needed to cover the cost of insurance to the next processing date on which cost of insurance charges are deducted with respect to the policy. The cost of insurance for this purpose shall be determined using the mortality tables for the policy prescribed in subsection 3.C; or

b. The policy cash surrender value, calculated as of the valuation date and in a manner that is consistent with that used in calculating the net premium reserve on the valuation date.

Deleted: **Drafting Note:** It may be appropriate to consider potential simplifications for the net premium reserve for YRT reinsurance assumed. The unearned annual tabular cost of insurance ("interpolated C_X") is one potential option to examine.¶

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Mary Bahna-Nolan, Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group – adoption of new CSO tables

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:

   Valuation Manual (June 18, 2015), VM-20 Sections 3.C.1.c.(4) (page 11)

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.)

   See attached

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

   Remove the provisions for unisex rates as they would apply to reserves. Unisex rates have been authorized for nonforfeiture under certain conditions, but have not been prescribed for reserves. This provision was included in error, and should be removed.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Table of Contents

Section 3. Net Premium Reserve

C. Net Premium Reserve Assumptions

1. Mortality Rates

a. Except as indicated in subsection 3.C.1.b, and subject to the conditions outlined for reserves in VMA-814 and A-815 in Appendix A of this manual,, the mortality standard used in determining the present values described in Subsection B of this Section shall be the 2001 Commissioners Standard Ordinary (CSO) Mortality Table as defined in VM-M Section 1.G. of this manual.

b. Subject to the conditions defined in 3.C.1.c., the 2017 Commissioner's Standard Ordinary Mortality Tables as defined in VM-M Section 1.H. is required as the valuation standard for Ordinary Life policies issued on or after January 1, 2020 and subject to this Section {intent is Section 3 of VM-20}. A company may elect to apply this table to determine minimum reserve standards to one or more plans of insurance for policies issued on or after January 1, 2017.

c. Conditions for application of the 2017 CSO:

(1) For each plan of insurance with separate rates for smokers and nonsmokers, an insurer may use:

(a) Composite mortality tables to determine minimum reserve liabilities; or

(b) Smoker and nonsmoker mortality to determine minimum reserve liabilities if nonforfeiture values are also determined using smoker and nonsmoker mortality.

(2) For plans of insurance without separate rates for smokers and nonsmokers, the composite mortality tables shall be used.

(3) For the purpose of determining minimum reserve values and amounts of paid-up nonforfeiture benefits, the 2017 CSO Mortality Table may, at the option of the company for each plan of insurance, be used in its ultimate or select and ultimate form.

Deleted: (4) Gender-Blended Tables shall apply in the following circumstances: ¶
For any ordinary life insurance policy delivered or issued for delivery that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a mortality table that is a blend of the 2017 CSO Mortality Table (M) and the 2017 CSO Mortality Table (F) may, at the option of the company for each plan of insurance, be used in determining minimum reserves.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   NAIC Staff

   Revisions for Aggregation (Keep Term and ULSG Separate)

   VM-20, Section 2, VM-20, Section 3, VM 20, Sec 4, VM 20 Sec 5G – Two options are provided
   Move Section 7.B.3. of VM-20 to Section 5.A. of VM-20.

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, April 6, 2016 LATF adopted version

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.) See attached.

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

   A. LATF adopted changes to require that the comparison of the 3 reserve calculations be done at a product level. In order to do so, there needs to be clarity on how the product level reserve is determined. Section 3.F., 4.D., and 5.G. have been added to define the net premium reserve, the deterministic reserve, and the stochastic reserve by product.
   B. Deterministic and stochastic reserves are each defined net of reinsurance. To simplify Section 2, Section 3.E. is added to define the NPR to be after reinsurance so that all three are on a consistent basis.
   C. Section 2.A. was restructured to define a section for each of the three product types. In addition, the following changes were made to 2.A.
   D. Section 2.B. defines where the product reserve is defined
   E. Section 2.C. defines the allocation to policy – which allocates the product reserve to the policies of that product.
   F. Sections 5.G and 7.B.3. define that a stochastic model can be run combining the products that are managed together, then attributed to each product by using the same scenarios to run that product and allocating any difference.
   G. The discussion of aggregation in Section 7.B.3. describes the approach to group policies for the purpose of calculating the stochastic reserve. As such, this paragraph more appropriately belongs in Section 5 that describes the stochastic reserve calculation.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Section 2. Minimum Reserve

A. All policies subject to these requirements shall be included in one of the product groups defined by paragraphs 1 – 3 below. The company may elect to exclude one or more groups of policies from the stochastic reserve calculation and/or the deterministic reserve calculations. When excluding a group of policies from a reserve calculation, the company must document that the applicable exclusion test defined in section 6 is passed for that group of policies. The minimum reserve for each product group is defined by paragraphs 1 – 3, and the total minimum reserve equals the sum of 1, 2 and 3 below, defined as:

1. Term Policies – all term policies are to be included in b. unless the company has elected to exclude a group of policies from the stochastic reserve calculation and has applied the stochastic exclusion test defined in Section 6, passed the test, and documented the results.
   a. For the group of term policies subject to Section 3.A.1 for which the company did not compute the stochastic reserve ; the product minimum net premium reserve plus the excess, if any, of the deterministic reserve determined pursuant to Section 4 over the quantity (A-B) where A = the product minimum net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.
   b. For the group of term policies subject to Section 3.A.1 for which the company computes all three reserve calculations: the product minimum net premium reserve plus the excess, if any, of the greater of the deterministic reserve determined pursuant to Section 4 and the stochastic reserve determined pursuant to Section 5 over the quantity (A-B) where A = the product minimum net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.
2. Universal Life with Secondary Guarantee Policies – all ULSG policies are to be included in b. unless the company has elected to exclude a group of policies from the stochastic reserve calculation and has applied the stochastic exclusion test defined in Section 6, passed the test, and documented the results.
   a. For the group of universal life insurance with secondary guarantee policies subject to Section 3.A.1 for which the company did not compute the stochastic reserve ; the product minimum net premium reserve plus the excess, if any, of the deterministic reserve determined pursuant to Section 4 over the quantity (A-B) where A = the product minimum net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.
   b. For the group of universal life insurance with secondary guarantee policies subject to Section 3.A.1 for which the company computes all three reserve calculations: the product minimum reserve plus the excess, if any, of the greater of the deterministic reserve determined pursuant to Section 4 and the stochastic reserve determined pursuant to Section 5 over the quantity (A-B) where A = the product minimum net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.
3. Life Insurance Policies subject to Section 3.A.2. – all life insurance policies subject to 3.A.2. are to be included in c. unless the company has elected to exclude the group of policies from the the stochastic reserve calculation or both the deterministic and stochastic reserve calculations and has applied the applicable exclusion test defined in Section 6, passed the test, and documented the results.
   a. For the group of policies subject to Section 3.A.2 for which the company did not compute the deterministic reserve nor the stochastic reserve: the product minimum net premium reserve for those policies.
   b. For the group of policies subject to Section 3.A.2. for which the company did not compute the stochastic reserve but did compute the deterministic reserve: the product minimum net premium reserve plus the excess, if any, of the deterministic reserve determined pursuant to Section 4 over the quantity (A-B) where A = the product minimum reserve for those policies, and B = any due and deferred premium asset held on account of those policies.
   c. For the group of policies subject to Section 3.A.2. for which the company computes all three reserve calculations; the product net premium reserve plus the excess, if any, of the greater of the deterministic reserve determined pursuant to Section 4 and the stochastic reserve determined pursuant to Section 5 over the quantity (A-B) where A = the product minimum net premium reserve for those policies, and B = any due and deferred premium asset held on account of those policies.

B. Section 3 defines the requirements for the policy Net Premium Reserve, and subsection 3.F. defines how that reserve is

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attributed to a product group. Section 4 defines the requirements for the deterministic reserve, and subsection 4.D. defines how that reserve is attributed to a product group. Section 5 defines the requirements for the stochastic reserve, and subsection 5.G. defines how that reserve is apportioned among product groups.

C. The reserve for each product group as determined in A.1., A.2., or A.3. shall be allocated to each policy within that product group in the same proportion as the minimum net premium reserve for that policy to the minimum net premium reserve for the product group.

D. A group of policies for which neither deterministic nor stochastic reserves are required or calculated are not subject to principle-based valuation as defined under the Standard Valuation Law.

E. The company may calculate the deterministic reserve and the stochastic reserve as of a date no earlier than three months before the valuation date, using relevant company data, provided an appropriate method is used to adjust those reserves to the valuation date. Company data used for experience studies to determine prudent estimate assumptions are not subject to this three-month limitation.

F. If a company has separate account business, the company shall allocate the minimum reserve between the general and separate accounts subject to the following:

1. The amount allocated to the general account shall not be less than zero and shall include any liability related to contractual guarantees provided by the general account; and

2. The amount allocated to the separate account shall not be less than the sum of the cash surrender values and not be greater than the sum of the account values attributable to the separate account portion of all such contracts.

G. A company may use simplifications, approximations and modeling efficiency techniques to calculate the net premium reserve, the deterministic reserve and/or the stochastic reserve required by this section if the company can demonstrate that the use of such techniques does not understate the reserve by a material amount and the expected value of the reserve calculated using simplifications, approximations and modeling efficiency techniques is not less than the expected value of the reserve calculated that does not use them. This does not preclude use of model segmentation for purposes of determining discount rates.

H. The reserves for supplemental benefits and riders shall be calculated consistent with the requirements for "Riders and Supplemental Benefits" in Section II – Reserve Requirements.

Section 3. Net Premium Reserve

Paragraphs A through D are intentionally omitted

E. The policy minimum net premium reserve is defined to be the policy net premium reserve determined in subsections A. – D., less a credit for reinsurance ceded as defined in Section 8.

F. The minimum net premium reserve for a product group (term, ULSG, all other) is the sum of the policy minimum net premium reserves determined in E. for the policies in the product group.

Section 4. Deterministic Reserve

For a group of one or more policies for which a deterministic reserve is to be calculated, the company shall calculate the deterministic reserve for the group using the method described in either Subsection A or Subsection B of this section .

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.6, 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.5.

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Deleted: <#>For purposes of this Section, the aggregate net premium reserve for a group of policies is the sum of the net premium reserve pursuant to Section 3 for each of the policies of the group less any net premium reserve credit for reinsurance ceded pursuant to Section 8.B. for the same group of policies.¶
<#>The minimum reserve for each policy is equal to the net premium reserve for that policy calculated as specified in Section 3 less that policy's portion of any net premium reserve credit for reinsurance ceded as specified in Section 8.B. (the Allocation Net Premium Reserve) plus the policy's allocated portion of any reserve excess defined as: .¶
For each policy of the group whose reserve is determined according to A.2., that policy's allocated portion of any reserve excess is the Allocation Net Premium Reserve for that policy multiplied by the ratio of the deterministic reserve excess determined by A.2. divided by the aggregate Allocation Net Premium Reserves for that group of policies.¶
For each policy of the group whose reserve is determined according to A.3., that policy's allocated portion of any reserve excess is the Allocation Net Premium Reserve for that policy multiplied by the ratio of the reserve excess determined by A.3. divided by the aggregate Allocation Net Premium Reserves for that group of policies.¶

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Deleted: <#>If the company elects to perform the stochastic and deterministic exclusion tests in Section 6 pursuant to section 2.B above, then:¶
<#>Stochastic reserves must be calculated for each group of policies that fail the stochastic exclusion test in Section 6.¶
<#>Deterministic reserves must be calculated for each group of policies that fail either the deterministic exclusion or stochastic exclusion tests in Section 6.¶
<#>If a company elects to calculate stochastic reserves for one or more groups of policies, the company is not required to perform the exclusion tests in Section 6 for those policies.¶
<#>A group of policies for which neither deterministic nor stochastic reserves are required or calculated are not principle-based valuation reserves as defined under the Standard Valuation Law.¶

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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 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.F.3.

      Guidance Note: When 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.F.3;

      Guidance Note: Future net policy loan cash flows include: policy loan interest paid in cash plus repayments of policy loan 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), less additional policy loan principal.

   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.

B. Calculate the deterministic reserve as a – b, where

a = the aggregate annual statement value of those starting assets which, when projected along with all premium and investment income, result in the liquidation of all projected future benefits and expenses by the end of the projection horizon. Under this alternative, the following considerations apply:

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

2. The requirements for future benefits and premiums in Section 4.A apply as well to the calculation of the deterministic reserve under this subsection.

b = that portion of the PIMR amount allocated under Section 7.

C. Future net reinsurance aggregate cash flows shall be allocated as follows:

1. Future net reinsurance aggregate cash flows shall be allocated to each policy reinsured under a given reinsurance agreement in the same proportion as the ratio of each policy's present value of future net reinsurance discrete cash flows to total present value of future net reinsurance discrete cash flows under the reinsurance agreement.

2. Future net reinsurance aggregate cash flows allocated to a group of policies is equal to the sum of future net reinsurance aggregate cash flows allocated to each policy in the group.

D. If a group of policies for which a deterministic reserve is calculated includes policies from more that one product group, where product group is defined, as in Section 2, to be term insurance policies, ULSG policies, or all other types of policies, a deterministic reserve shall be determined for each product group by following the process of A – C above by treating each product group as a subgroup. The Net Asset Earned rate used for discounting each product group can be the NAER for the group of policies. If the sum of the deterministic reserve for each product group does not equal the total deterministic reserve, the total shall be allocated to each product group proportionally.

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Section 5. Stochastic Reserve

For a group of one or more policies for which a stochastic reserve is to be calculated, the company shall calculate the stochastic reserve as follows:

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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., and further described in Appendix 1E. In determining the stochastic reserve, the company shall determine the number and composition of subgroups for aggregation purposes in a manner that is consistent with how the company manages risks across the different product types, and that reflects the likelihood of any change in risk offsets that could arise from shifts between product types. If a company is managing the risks of two or more different product types as part of an integrated risk management process, then the products may be combined into the same aggregation subgroup. If policies from more than one product group is included in an aggregation subgroup, the reserve for each product group shall also be determined, as described in Section 5.G.

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Guidance Note: Aggregation refers to the number and composition of subgroups of policies that are used to combine cash flows. Aggregating policies into a common subgroup allows the cash flows arising from the policies for a given stochastic scenario to be netted against each other (i.e., allows risk offsets between policies to be recognized). Note Section 5G regarding the calculation of the stochastic reserve on a standalone basis for each product group. Product group is defined, as in Section 2, to be term insurance policies, ULSG policies or all other types of policies.

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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.4 from the projection start date to the end of the respective projection year.

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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.6.

G. The stochastic reserve equals the amount determined in Subsection 5.F. If the company includes policies from two or more product groups in a subgroup for aggregation purposes as described in Section 5.A, the company shall calculate the stochastic reserve for policies from each product group on a standalone basis by following the process of A – F above.

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Section 7. Cash Flow Models

A. Model Structure

1. The company shall design and use a cash flow model that:

   a. Complies with applicable Actuarial Standards of Practice in developing cash flow models and projecting cash flows.

   b. Uses model segments consistent with the company's asset segmentation plan, investment strategies, or approach used to allocate investment income for statutory purposes. Assets of segments that cover policies both subject to and not subject to these requirements may be allocated as defined in Section 7.D.1.b.

   c. Assigns each policy subject to these requirements to only one model segment and shall use a separate cash flow model for each model segment.

   d. Projects cash flows for a period that extends far enough into the future so that no obligations remain.

2. The company may use simplifications or modeling efficiency techniques to develop cash flows, if the approach is consistent with Section 2.G.

   Guidance Note: For example, it may be reasonable to assume 100% deaths or 100% surrenders after some appropriate period of time.

B. General Description of Cash Flow Projections

1. For the deterministic reserve and for each scenario for the stochastic reserve, the company shall project cash flows ignoring federal income taxes and reflecting the dynamics of the expected cash flows for the entire model segment. The company shall reflect the effect of all material product features, both guaranteed and non-guaranteed. The company shall project cash flows including the following:

a. Revenues received by the company including gross premiums received from the policyholder (including any due premiums as of the projected start date).

Guidance Note: to be consistent with quantity B defined in Section 2.a.2 and Section 2.A.3, and quantity B defined in Section 6.B.3.b., all due premiums as of the projection start date are assumed to be collected after the projection start date, but the company needs to determine an assumption as to the timing of when the due premiums will be received.

b. Amounts charged to account values on general accounts business and use those amounts to determine any effects on future policy benefits, and not as revenue.

Guidance Note: Amounts charged to account values on general accounts business examples include cost of insurance and expense charges.

c. All material benefits paid to policyholders, including but not limited to death claims, surrender benefits, and withdrawal benefits, reflecting the impact of all material guarantees.

d. Net cash flows between the general account and separate account for variable products.

Guidance Note: Cash flows going out from the general account to the separate account increase the reserve, and cash flows coming in to the general account from the separate account decrease the reserve. Examples include allocation of net premiums to the separate account, policyholder-initiated transfers between fixed and variable investment options, transfers of separate account values to pay death or withdrawal benefits, and amounts charged to separate account values for cost of insurance, expense, etc.

e. Insurance company expenses (including overhead expenses), commissions, fund expenses, contractual fees and charges, and taxes (excluding federal income taxes and expenses paid to provide fraternal benefits in lieu of federal income taxes).

f. Revenue sharing income received by the company (net of applicable expenses) and other applicable revenue and fees associated with the policies and adjusting the revenue to reflect the uncertainty of revenue sharing income that is not guaranteed.

g. Net cash flows associated with any reinsurance as described in Section 8.

h. Cash flows from derivative liability and derivative asset programs, as described in Section 7.L.

i. Cash receipts or disbursements associated with investment income, realized capital gains and losses, principal repayments, asset default costs, investment expenses, asset prepayments, and asset sales. Cash flows related to policy loans are handled in the reserve calculation in a manner similar to cash flows to and from separate accounts.

Guidance Note: Since the projection of cash flows reflect premium mode directly, deferred premiums are zero under this approach.

2. In determining the deterministic reserve and stochastic reserve, the company may perform the cash flow projections for each policy in force on the date of valuation or by grouping policies using modeling efficiency techniques. If such techniques are used, the company shall develop the groups in a manner consistent with Section 2.G.

Deleted: **Drafting Note:** The Actuarial Standards Board is in the process of developing a new Actuarial Standard of Practice (ASOP) for principle-based reserves for life products. It is anticipated that this ASOP will provide guidance on how to group policies into representative modeling cells, as well as providing guidance on model granularity versus model accuracy.¶

Deleted: 3. . In determining the stochastic reserve, the company shall determine the number and composition of subgroups for aggregation purposes in a manner that is consistent with how the company manages risks across the different product types, and that reflects the likelihood of any change in risk offsets that could arise from shifts between product types. If a company is managing the risks of two or more different product types as part of an integrated risk management process, then the products may be combined into the same subgroup.¶

¶

Guidance Note: Aggregation refers to the number and composition of subgroups of policies that are used to combine cash flows. Aggregating policies into a common subgroup allows the cash flows arising from the policies for a given stochastic scenario to be netted against each other (i.e., allows risk offsets between policies to be recognized).¶

Life Actuarial (A) Task Force
Amendment Proposal Form*

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

   Valuation Manual Review Group.
   Removal of references to "reinsurance aggregate cash flows" and "reinsurance discrete cash flows" from the Valuation Manual

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:

   The following sections of VM-20 from the draft of the Valuation Manual adopted by the NAIC on November 22, 2015:

   VM-01 Definitions 49 and 51
   VM-20 Section 1
   VM-20 Section 4.A.4.d and 4C

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 attached.

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

   In the early drafts of VM-20 before the Net Premium Reserve (NPR) was added to VM-20, the calculation of the deterministic reserve was done on a seriatim basis in order to incorporate a cash value floor. It was thus necessary to allocate all cash flows to individual policies. In the case of reinsurance, most cash flows are discrete, that is, they are determined by applying reinsurance terms to an individual covered policy, without reference to the and events of other policies. However, some reinsurance cash flows, such as experience refunds or the incremental impact of an overall cap on certain payments, are not discrete. The former cash flows are defined in VM-01 as "reinsurance discrete cash flows" and the latter are defined as "reinsurance aggregate cash flows. Section 4.C provides for the allocation of reinsurance aggregate cash flows to individual policies based on the present value of reinsurance discrete cash flows. Since the introduction of the net premium reserve (which incorporates a cash value floor), the deterministic reserve is no longer calculated on a seriatim basis and thus allocation in Section 4.C is not needed. The terms "reinsurance discrete cash flows" and "reinsurance aggregate cash flows" are not used elsewhere in the Valuation Manual and thus references to these terms are not needed. This proposal eliminates these references.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
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VM-01: DEFINITIONS FOR TERMS IN REQUIREMENTS

35. The term "net asset earned rates" (NAER) means the path of earned rates reflecting the net general account portfolio rate in each projection interval (net of appropriate default costs and investment expenses). (Used in VM-20 and VM-31)

49.

50. The term "reinsurance cash flows" means the amount paid under a reinsurance agreement between a ceding company and an assuming company. Positive reinsurance cash flows shall represent amounts payable from the assuming company to the ceding company; negative reinsurance cash flows shall represent amounts payable from the ceding company to the assuming company. (Used in VM-20 and VM-31)

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

Section 1. Purpose and Definitions

Section 4. Deterministic Reserve

For a group of one or more policies for which a deterministic reserve must be calculated, the company shall calculate the deterministic reserve for the group using the method described in either Subsection A or Subsection B of this section

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, where:

1. Cash flows are projected in compliance with the applicable requirements in Sections 7, 8 and 9 over economic scenario 12 described in Section 7.G.1, and further described in Appendix 1E.

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

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

   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.F.3.

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;

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Deleted: The term "reinsurance aggregate cash flows" means the difference between the reinsurance cash flows and reinsurance discrete cash flows, as defined in VM-01. Examples of reinsurance aggregate cash flows include experience refunds, or the incremental impact of an overall cap on reinsurance discrete cash flows that would otherwise be payable by the reinsurer. (Used in VM-20)

Deleted: <#>The term "reinsurance discrete cash flows" means reinsurance cash flows determined by applying reinsurance terms to an individual covered policy, without reference to the circumstances and events of other policies. Examples of reinsurance discrete cash flows would be proportional sharing of one or more items of revenue or expense associated with an underlying reinsured policy, without attempting to take into account the potential impact of an overall dollar cap in the reinsurance agreement, for all covered policies, on the total revenues or expenses shared for policies in the covered group. (Used in VM-20)¶

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<#>The term "reinsurance aggregate cash flows" means the difference between reinsurance cash flows and reinsurance discrete cash flows, as defined below. An example of reinsurance aggregate cash flows includes experience refunds.¶
Guidance Note: If a reinsurance agreement gives rise to reinsurance aggregate cash flows, the company should take care to examine and apply the guidance in Sections 8.A.3 through 8.A.5 with regard to the treatment of such cash flows.¶
<#>The term "reinsurance discrete cash flows" means reinsurance cash flows determined by applying reinsurance terms to an individual covered policy, without reference to the circumstances and events of other policies. Examples of reinsurance discrete cash flows would be proportional sharing of one or more items of revenue or expense associated with an underlying reinsured policy.¶

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¶

c. Future net policy loan cash flows, if policy loans are explicitly modeled under Section 7.F.3;

Guidance Note: Future net policy loan cash flows include: policy loan interest paid in cash plus repayments of policy loan 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), less additional policy loan principal.

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

e. 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.

B. Calculate the deterministic reserve as a – b, where

a = the aggregate annual statement value of those starting assets which, when projected along with all premium and investment income, result in the liquidation of all projected future benefits and expenses by the end of the projection horizon. Under this alternative, the following considerations apply:

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

2. The requirements for future benefits and premiums in Section 4.A apply as well to the calculation of the deterministic reserve under this subsection.

b = that portion of the PIMR amount allocated under Section 7.D.

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Deleted: <#>The future net reinsurance aggregate cash flows allocated to this group of policies as described in Subsection B of this section; and¶

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<#>Future net reinsurance aggregate cash flows shall be allocated as follows:¶
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<#>Future net reinsurance aggregate cash flows shall be allocated to each policy reinsured under a given reinsurance agreement in the same proportion as the ratio of each policy's present value of future net reinsurance discrete cash flows to total present value of future net reinsurance discrete cash flows under the reinsurance agreement.¶
¶
<#>Future net reinsurance aggregate cash flows allocated to a group of policies is equal to the sum of future net reinsurance aggregate cash flows allocated to each policy in the group.¶

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   NAIC VM Review Group - Move Small Company Exemption from Section 6 of VM-20 to Section II of the Valuation Manual

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:

   Valuation Manual, April 6, 2016 LATF adopted version

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.)

   Move Small Company Exemption from Section 6 of VM-20 to Section II of the Valuation Manual.

   See attached.

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

   The requirements to satisfy the VM-20 companywide exemption for Life Insurance policies are currently located in Section 6 of VM-20 that describe the exclusion tests for the deterministic reserve calculation and the stochastic reserve calculation. This companywide exemption more appropriately belongs in Section II of the Valuation Manual that defines the reserve requirements for life insurance policies and the products included in the scope of VM-20.

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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II. RESERVE REQUIREMENTS

This section provides the minimum reserve requirements by type of product. All reserve requirements provided by this section relate to business issued on or after the operative date of the Valuation Manual. All reserves must be developed in a manner consistent with the requirements and concepts stated in the Overview of Reserve Concepts in Section I of the Valuation Manual.

Guidance Note: The words policies and contracts are used interchangeably.

LIFE INSURANCE PRODUCTS

A. This subsection establishes reserve requirements for all contracts issued on and after the operative date of the Valuation Manual that are classified as life contracts defined in the *Accounting Practices and Procedures Manual*, Statutory Statement of Accounting Principle 50 (SSAP 50), with the exception of annuity contracts and credit life contracts. Minimum reserve requirements for annuity contracts and credit life contracts are provided in other subsections of the Valuation Manual.

B. Minimum reserve requirements for variable and non-variable individual life contracts, excluding preneed life contracts, industrial life contracts[1], credit life contracts, and policies of companies exempt pursuant to the companywide exemption in paragraph D below, are provided by VM-20 except for election of the transition period in paragraph 3 of this subsection.

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Minimum reserve requirements of VM-20 are considered PBR requirements for purposes of the Valuation Manual and VM-31 unless VM-20 or other requirements apply only the net premium reserve method or applicable requirements in VM-A and VM-C.

Minimum reserve requirements for life contracts not subject to VM-20 are those pursuant to applicable requirements in VM-A and VM-C.

C. A company may elect to establish minimum reserves pursuant to applicable requirements in Appendix A (VM-A) and Appendix C (VM-C) for business otherwise subject to VM-20 requirements and issued during the first three years following the operative date of the Valuation Manual. A company electing to establish reserves using the requirements of VM-A and VM-C may elect to use the 2017 CSO as the morality standard following the conditions outlined in VM-20 Section 3. If a company during the three years elects to apply VM-20 to a block of such business, then a company must continue to apply the requirements of VM-20 for future issues of this business.

D. Companywide Exemption

1. A company meeting all of the following conditions may file a statement of exemption for the current calendar year with their domestic commissioner prior to July 1 of that year certifying that these conditions are met based on premiums and other values from the prior calendar year financial statements and that any ULSG business issued since the operative date of the Valuation Manual meets the definition for non-material secondary guarantee. The statement of exemption must also be included with the NAIC filing for the second quarter of that year. The Commissioner may reject such statement prior to September 1 and require the company to follow the requirements of VM-20 for the Ordinary Life policies. Otherwise, the minimum reserve requirements for its Ordinary Life policies are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in Section 3.C.1 and VM-M Section 1.H.

2. Conditions for exemption:

a. The company has less than $300 million of ordinary life premiums[2] and, if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums[2] of less than $600 million,

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[1] An industrial life contract is a life insurance contract that is required to comply with the minimum reserve standard for industrial life insurance policies as provided by the Valuation Manual and which meet the requirements of the state where issued for industrial life insurance policies.

[2] Premiums are measured as direct plus reinsurance assumed from an unaffiliated company from the Ordinary Life line of business reported in the prior calendar year L & H annual statement, Exhibit 1 Part 1.

and

b. The company reported Total Adjusted Capital of at least 450% of the authorized control level RBC in the most recent RBC report, and the appointed actuary has provided an unqualified opinion on the reserves,

and

c. Any ULSG policies issued or assumed by the company with an issue date on or after the operative date of the valuation manual meet the definition of a non-material secondary guarantee ULSG product.

Section 6. Stochastic and Deterministic Exclusion Tests

A. Stochastic Exclusion Test

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Deleted: <#>The company may elect to exclude one or more groups of polices from the stochastic reserve calculation in Section 5 if the exclusion test defined in Section 6.B is passed. The company may elect to exclude one or more groups of polices from the deterministic reserve calculation in Section 4 if the exclusion test defined in Section 6.C is passed. Companywide Exemption¶

Deleted: <#>A company meeting all of the following conditions may file a statement of exemption for the current calendar year with their domestic commissioner prior to July 1 of that year certifying that these conditions are met based on premiums and other values from the prior calendar year financial statements and that any ULSG business issued since the operative date of the Valuation Manual meets the definition for non-material secondary guarantee. The statement of exemption must also be included with the NAIC filing for the second quarter of that year. The Commissioner may reject such statement prior to September 1 and require the company to follow the requirements of VM-20 for the Ordinary Life policies. Otherwise, the minimum reserve requirements for its Ordinary Life policies are those pursuant to applicable methods required in VM-A and VM-C using the mortality as defined in Section 3.C.1 and VM-M Section 1.H.¶

Deleted: <#>Conditions for exemption:¶
<#>The company has less than $300 million of ordinary life premiums1 and, if the company is a member of an NAIC group of life insurers, the group has combined ordinary life premiums1 of less than $600 million,¶
¶
And¶
¶
<#>The company reported Total Adjusted Capital of at least 450% of the authorized control level RBC in the most recent RBC report, and the appointed actuary has provided an unqualified opinion on the reserves,¶
¶
And¶

Deleted: ¶
<#>Any ULSG policies issued or assumed by the company with an issue date on or after the operative date of the valuation manual meet the definition of a non-material secondary guarantee ULSG product. ¶

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Exposure of Amendment Proposal

ACLI Modifications to Deterministic Reserve Exclusion Test

Exposed for comment through April 25, 2016
Send comments to Reggie Mazyck
(RMazyck@NAIC.ORG)

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   John Bruins, ACLI – Modifications to Deterministic Reserve Exclusion Test

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:

   Valuation Manual June 18, 2015 adopted version, VM-20 Section 6

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.)

See following 2 pages

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

Based on the discussions about NPR, this provides that the deterministic exclusion test is not available for term products during the initial years of PBR, with a sunset to this non-availability of the test. Even though not available, companies will be asked to report results of the exclusion test for term to inform future decisions.

A number of questions have been raised about specific provisions in the deterministic exclusion test. In addition, there are proposed changes to lapse rates in Section 3. This test has been revised to retain the original concept applicable to term comparing gross premium to valuation net premium, but to clean up the description. In short, for term insurance, consider the early duration premiums until the first shock lapse. The valuation premium to be used for the test uses no lapse during the period until a shock lapse, and 100% lapse at the end.

In addition, the gross premium to compare is the anticipated premium, not the guaranteed premium.

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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~~B~~C. Deterministic Exclusion Test

1. Scope of products:
   a. A group of universal life policies with a secondary guarantee that does not meet the definition of a 'non-material secondary guarantee' or a group of policies which is not excluded from the stochastic reserve requirement is deemed to not pass the deterministic reserve exclusion test and the deterministic reserve must be computed for this group of policies.
   b. ~~For valuations prior to January 1, 2020, t~~The Deterministic Exclusion Test may not be used for Term Insurance Policies subject to Section ~~3.B.4~~3.A.1. and these policies may not be excluded from the deterministic reserve requirements of Section 5.

2. Except as provided in subsection 6.~~B~~C.1, a group of policies passes the deterministic reserve exclusion test if the company demonstrates that the sum of the valuation net premiums for all future years for the group of policies, determined according to paragraph 5 below, is less than the sum of the corresponding ~~guaranteed~~ anticipated gross premiums for such policies. The test shall be determined on a direct or assumed basis.

3. A company may not group together policies of different contract types with significantly different risk profiles for purposes of the calculation in subsection 6.~~B~~C.2.

4. If a group of policies being tested is no longer adding new issues, and the test has been passed for three consecutive years, the group passes until determined otherwise. For this group, the test must be computed at least once each five years going forward.

5. For purposes of determining the valuation net premiums used in the demonstration in subsection 6.~~B~~C.2:

   a. If pursuant to Section 2 the net premium reserve is the minimum reserve required under Section 2.A of the Standard Valuation Law for policies issued prior to the operative date of the Valuation Manual, the valuation net premiums are determined according to those minimum reserve requirements;

   b. ~~If the net premium reserve is determined according to Section 3.A.1, the lapse rates assumed for all durations are 0%;~~

   For term policies, determine the first duration that would use a lapse rate of 25% or higher. The premium comparison is only for durations prior to that shock lapse, and uses a net premium based on the NPR methodology of Section 3., interest, and mortality, but modified to use zero annual lapse until that duration, and 100% lapse at that duration. ~~with guaranteed gross premium patterns that subject the policy to shock lapses, as defined in Section 3.C.3.b.iii, the valuation net premiums comparison to the guaranteed gross premiums indicated in paragraph 2 shall be performed considering only the initial premium period;~~

   ~~d~~e. If, for a group of policies, the net premium produced by using the mortality the company expects to emerge exceeds the net premium produced by using valuation mortality, ~~anticipated mortality for the group of policies exceeds the valuation mortality,~~ then the company shall use the ~~anticipated~~ mortality the company expects to emerge to determine the net premium. ~~For this purpose, mortality shall be measured as the present value of future death claims discounted at the valuation interest rate used for the net premium reserve.~~

   ~~e~~f. The ~~guaranteed~~ anticipated gross premium is defined as~~:~~

   ~~i. For universal life policies, the guaranteed gross premium shall be~~ the gross premium that would otherwise be used for the deterministic reserve following the guidance of Sections 7 and 9. ~~specified in the contract, or if no premium is specified, the level annual gross premium at issue~~

~~that would keep the policy in force for the entire period coverage is to be provided based on the policy guarantees of mortality, interest and expenses; and~~

~~ii. For policies other than universal life policies, the guaranteed gross premium shall be the guaranteed premium specified in the contract.~~

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   VM Review 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 6.B.2

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.)

   See attached

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

   To allow for the use of the company's default costs and reinvestment earnings assumptions from its asset adequacy analysis in the Stochastic Exclusion Ratio Test

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Notes:			

Section 6. Stochastic and Deterministic Exclusion Tests

B. Stochastic Exclusion Test

2. Stochastic Exclusion Ratio Test

b. In calculating the ratio in item a above:

i. the company shall calculate an adjusted deterministic reserve for the group of policies for each of the 16 scenarios that is equal to either (a) or (b) below:

(a) the deterministic reserve defined in Section 4.A, but with the following differences:

1) Using anticipated experience assumptions with no margins;

2) Using the interest rates and equity return assumptions specific to each scenario; and

3) Using net asset earned rates and discount rates defined in Section 7.H. specific to each scenario to discount the cash flows.

(b) the gross premium reserve developed from the cash flows from the company's Asset Adequacy Analysis models, using the experience assumptions of the company's cash flow analysis, but with the following differences:

1) Using the interest rates and equity return assumptions specific to each scenario; and

2) Using the methodology to determine net asset earned rates and discount rates defined in Section 7.H specific to each scenario to discount the cash flows, but using the company's cash flow testing assumptions for default costs and reinvestment earnings.

ii. The company shall use the most current available baseline economic scenario and the 15 other economic scenarios published by the NAIC. The methodology for creating these scenarios can be found in Appendix 1 of this VM-20.

iii. The company shall use assumptions within each scenario that are dynamically adjusted as appropriate for consistency with each tested scenario.

iv. The company may not group together contract types with significantly different risk profiles for purposes of calculating this ratio.

v. Mortality improvement beyond the projection start date may not be reflected in the mortality assumption for the purpose of the calculating the stochastic exclusion ratio.

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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   VM Review 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 7.B.1.b – 7.B.1.c, 7.B.1.e – 7.B.1.j
   VM-20 Section 7.H.2.c.i & 7.H.3

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.)

   See attached

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

   Clarifies the definition of cash flows, including net investment earnings

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Section 7. Cash Flow Models

B. General Description of Cash Flow Projections

1. For the deterministic reserve and for each scenario for the stochastic reserve, the company shall project cash flows ignoring federal income taxes and reflecting the dynamics of the expected cash flows for the entire model segment. The company shall reflect the effect of all material product features, both guaranteed and nonguaranteed. The company shall project cash flows including the following:

a. Revenues received by the company including gross premiums received from the policyholder (including any due premiums as of the projected start date).

Guidance Note: to be consistent with quantity B defined in Section 2.a.2 and Section 2.A.3, and quantity B defined in Section 6.B.3.b., all due premiums as of the projection start date are assumed to be collected after the projection start date, but the company needs to determine an assumption as to the timing of when the due premiums will be received.

b. All material benefits projected to be paid to policyholders, including but not limited to death claims, surrender benefits, and withdrawal benefits, reflecting the impact of all material guarantees and adjusted to take account of amounts projected to be charged to account values on general account business.

Guidance Note: Amounts charged to account values on general account business are not revenue; examples include cost of insurance and expense charges.

c. Non-guaranteed element cash flows as described in Section 7.C.

d. Net cash flows between the general account and separate account for variable products.

Guidance Note: Cash flows going out from the general account to the separate account increase the reserve, and cash flows coming in to the general account from the separate account decrease the reserve. Examples include allocation of net premiums to the separate account, policyholder-initiated transfers between fixed and variable investment options, transfers of separate account values to pay death or withdrawal benefits, and amounts charged to separate account values for cost of insurance, expense, etc.

e. Insurance company expenses (including overhead expenses), commissions, fund expenses, contractual fees and charges, and taxes (excluding federal income taxes and expenses paid to provide fraternal benefits in lieu of federal income taxes), as described in Section 9.E.

f. Revenue sharing income received by the company (net of applicable expenses) and other applicable revenue and fees associated with the policies and adjusting the revenue to reflect the uncertainty of revenue sharing income that is not guaranteed, as described in Section 9.G.

g. Net cash flows associated with any reinsurance as described in Section 8.

h. Cash flows from derivative liability and derivative asset programs, as described in Section 7.K.

i. Cash receipts or disbursements associated with invested assets (other than policy loans) as described in in Section 7.F., including investment income, realized capital gains and losses, principal repayments, asset default costs, investment expenses, asset prepayments, and asset sales.

j. If modeled explicitly, cash flows related to policy loans as described in Section 7.F.3.b., including interest income, new loan payments, and principal repayments.

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Guidance Note: Amounts charged to account values on general accounts business

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Guidance Note: Since the projection of cash flows reflect premium mode directly, deferred premiums are zero under this approach.

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–f below. 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. Gross investment income plus capital gains and losses, minus prescribed default costs as defined in Section 9.F, and minus investment expenses; and

      ii. Income from derivative asset programs.

   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.

   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.

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.G.

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3. 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.

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Valuation Manual Review 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 7F

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.)

Section 7

F. Cash Flows from Invested Assets

a. 5. Determine cash flows or total investment returns as appropriate for each projection interval for all separate account assets as follows: Determine the grouping for each variable fund and subaccount (e.g., bonds funds, large cap stocks, international stocks, owned real estate, etc.) as described in Section 7.J.

b. Project the total investment return for each variable fund and subaccount in a manner that is consistent with the prescribed returns described in Section 7.G.

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

   The proposed language provides consistency with language in Section 7.F.2.

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   VM Review 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 9.C (Mortality Assumptions)

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.)

   See attached

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

   These proposed changes will help clarify the calculation of the mortality assumption and lead to greater consistency between companies. The proposal will have no impact on the calculation of the prudent estimate assumption for mortality, or the level of the minimum reserve. A summary of the changes:

   1. Adds the definition of the required credibility formula by amount for the Limited Fluctuation Method. This will lower the probability that the wrong formula will be used and help ensure consistency between companies.

   2. Modifies the definition of the anticipated experience assumption to equal to the Company Experience Mortality Rates, rather than only removing the prescribed margins from the prudent estimate assumption. As stated above, this change will have no impact on the prudent estimate assumption, but has the following benefits:

      a. Provides a more consistent starting point to quantify the magnitude of the overall mortality margin (i.e. prescribed margins plus the implicit margin of grading to an industry table). VM-31 requires the company to disclose the size of the mortality margin in the PBR Actuarial Report, but allows the company to modify the anticipated experience assumption if the company believes the method used to determine the anticipated experience mortality assumption includes an implicit margin (Section 3.D.11.c.i. of VM-31). Since the grading of company experience to an industry table can be viewed as an implicit margin, this change requires the removal of this implicit margin from the anticipated experience assumption, which will help minimize the inconsistency between companies when quantifying the size of the mortality margin for the PBR Actuarial Report.

      b. Eliminates the burden on companies of having to do the grading of company experience to the industry mortality table twice (both with and without the prescribed margin factors).

      c. It more closely aligns the anticipated experience assumption with what the company has determined its anticipated experience to be.

   3. Deletes the duplicative wording in Section 9.C.7 regarding the need for an additional margin beyond the prescribed margins. The wording in Section 9.C.7 is identical to Section 9.C.5.d.

   4. Incorporates several minor, non-substantive wording changes to help clarify wording that is unclear and/or inconsistent.

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Notes:			

Section 9. Assumptions

C. Mortality Assumptions

1. Procedure for Setting Prudent Estimate Mortality Assumptions

a. The company shall determine mortality segments for the purpose of determining separate prudent estimate mortality assumptions for groups of policies that the company expects will have different mortality experience than other groups of policies (such as male vs. female, smoker vs. non-smoker, preferred vs. super-preferred vs. residual, etc.).

b. For each mortality segment, the company shall establish prudent estimate mortality assumptions using the following procedure:

i. Determine the company experience mortality rates as provided in subsection 9.C.2. If company experience data is limited or not available, the company can use an applicable industry basic table in lieu of company experience as provided in subsection 9.C.3.

ii. If the company determines company experience mortality rates as provided in subsection 9.C.2, then use the procedure described in subsection 9.C.3 to determine the applicable industry table for each mortality segment to grade company experience to the industry table.

iii. Determine the level of credibility of the underlying company experience as provided in subsection 9.C.4.

iv. Determine the prescribed mortality margins as provided in subsection 9.C.5. Separate mortality margins are determined for company experience mortality rates and for the applicable industry basic tables.

v. Use the procedure described in subsection 9.C.6 to determine the prudent estimate assumptions.

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2. Determination of Company Experience Mortality Rates

a. For each mortality segment, the company shall determine company experience mortality rates derived from company experience data. If company experience data is not available or limited, the company can choose to use an applicable industry basic table in lieu of its own company experience, as provided in subsection 9.C.3.

b. Company experience data shall be based on experience from the following sources:

i. Actual company experience for books of business within the mortality segment.

ii. Experience from other books of business within the company with similar underwriting.

iii. Experience data from other sources, if available and appropriate, such as actual experience data of one or more mortality pools in which the policies participate under the term of a reinsurance agreement. Data from other sources is appropriate if the source has underwriting and expected mortality experience characteristics that are similar to policies in the mortality segment.

c. The company experience mortality rates shall not be lower than the mortality rates the company expects to emerge which the company can justify and which are disclosed in the PBR Actuarial Report.

d. When determining the company experience mortality rates for each mortality segment, the company can base the mortality on more aggregate experience and use other techniques to further subdivide the aggregate class into various subclasses or mortality segments (e.g., start with aggregate non-smoker then use the conservation of total deaths principle, normalization or other approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions). In doing so, the company must ensure that when the mortality segments are weighted together, the total number of expected claims is not less than the company experience data for the aggregate class.

e. The company shall review, and update as needed, the company experience data described in subsection 9.C.2.b, whether based on actual experience or data from other sources, at least every three years. If updated experience becomes available prior to the end of three years since the last review or update, which alters the company's expected mortality for the mortality segments in a significant manner and such impact is expected to continue into the future, the company shall reflect the changes implied by the updated data in the current year.

i. The company experience data for each mortality segment shall include the most recent experience study and shall include the in force and claim data pertaining to the study period for all policies currently in the mortality segment or that would have been in the mortality segment at any time during the period over which experience is being evaluated.

ii. The period of time used for the experience study should be at least three exposure years and should not exceed ten exposure years.

f. The company may remove from the company experience data any policies for which the experience is reflected through adjustments to the prudent estimate assumptions as provided under subsection 9.C.6.e below, including policies insuring impaired lives and those for which there is a reasonable expectation, due to conditions such as changes in premiums or other policy provisions, that policyholder behavior will lead to mortality results that vary significantly from those that would otherwise be expected.

The company may adjust the company experience rates for each mortality segment to reflect the expected incremental change due to the adoption of risk selection and underwriting practices different from those underlying the company experience data identified above, provided that:

i. The adjustments are supported by published medical or clinical studies or other published studies that correlate a specific risk selection criteria to mortality or longevity experience (for example, criterion and correlations determined through predictive analytics); and

ii. The rationale and support for the use of the study and for the adjustments are disclosed in the PBR Actuarial Report.

Guidance Note: It is anticipated that the adjustment described in the second paragraph of 9.C.2.f to experience will rarely be made. Since these adjustments are expected to be rare, and since it is difficult to anticipate the nature of these adjustments, the commissioner may wish to determine the level of documentation or analysis that is required to allow such adjustments. The NAIC may want to consider whether approval by a centralized examination office would be an acceptable alternative to approval by the commissioner.

g. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the central point of the underlying company experience data to the valuation date may be incorporated.

3. Determination of Applicable Industry Basic Tables

a. The industry basic table shall be based on the most recent valuation basic table listed in VM-M Section 2, including the Primary, Limited Underwriting and RR Table forms, if available. The industry basic table used should be based on the table form that most appropriately reflects the risk characteristics of the respective mortality segment.

b. A modified industry basic table is permitted in a limited number of situations where an industry basic table does not appropriately reflect the expected mortality experience, such as joint life mortality, simplified underwriting, or substandard or rated lives. In cases other than modification of the table to reflect joint life mortality, the modification must not result in mortality rates lower than those in the industry basic table without approval by the commissioner.

c. The company may apply the underwriting criteria scoring procedure described in subparagraph d below to determine:

i. The industry basic table that can serve as the industry experience rates when company experience data is limited or not available.

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ii. The applicable industry basic table for grading company experience mortality to industry experience mortality using the grading method described in subsection 9.C.6.b.iii.

d. The underwriting criteria scoring procedure is the algorithm embedded in the Underwriting Criteria Score Calculator, adopted by the Life Actuarial (A) Task Force and maintained on the Society of Actuaries website, (www.soa.org/Research/Experience-Study/Ind-Life/Valuation/2015-underwriting-criteria-calculator.aspx), which is used to score every risk class in a preferred risk class structure. The scoring is based on the specific underwriting criteria used by a company.

i. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for a particular mortality segment, the company shall take into account factors that are not recognized in the underwriting scoring algorithm but which are applicable to policies that are issued in that mortality segment.

Guidance Note: Examples of such factors include the number of underwriting exceptions that are made, the quality and experience level of the underwriters, and characteristics of the distribution system. For example, if a company deviates from its preferred criteria on a regular basis, then it needs to take that into consideration since the underwriting criteria scoring procedure is not designed to quantify that risk.

ii. In using the underwriting criteria scoring procedure to determine the appropriate industry basic table for policies that are issued subject to simplified underwriting and policies that are issued without underwriting, the company shall take into account factors not recognized in the underwriting scoring algorithm but which are applicable to such policies.

iii. In taking into account factors that are not recognized in the underwriting scoring algorithm, a company may, to the extent it can justify, adjust the industry basic tables up or down two tables from that determined by application of the underwriting criteria scoring procedures. Further adjustments to reflect risk characteristics not captured within the underwriting criteria scoring tool may be allowed upon approval by the commissioner.

e. As an alternative to the Underwriting Criteria Scoring Tool, the company may use other actuarially sound methods to determine the applicable basic tables related to subdivisions of mortality segments. The company shall document the analysis performed to demonstrate the applicability of the chosen method and resulting choice in tables and reasons why the results using the Underwriting Criteria Scoring Tool may not be suitable.

Guidance Note: For example, the company may determine a more all-inclusive basic table as a table appropriate for the whole mortality segment (appropriately modified by the removal of classified lives, term conversions or any other legitimately excludable class) and then subdivide that segment using actuarially sound methods including but not limited to the UCS.

f. If no industry basic table appropriately reflects the risk characteristics of the mortality segment, the company may use any well-established industry table that is based on the experience of policies having the appropriate risk characteristics in lieu of an industry basic table.

Guidance Note: Subsection 9.C.3.f above is intended to provide flexibility needed to handle products based on group-type mortality, etc., for which there might not be an industry basic table.

g. Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the date of the industry basic table (e.g., 2015 for the 2015 VBT) to the valuation date may be incorporated using the improvement factors for the applicable industry basic table as determined by the SOA and published on the SOA website: www.soa.org/Research/Experience-Study/Ind-Life/Valuation/research-YYYY-improve-scale-recommendation.aspx.

Guidance Note: The improvement factors for the industry basic table will be determined by the SOA. YYYY is the calendar year of valuation. The start date for the improvement factors to be applied to the industry basic tables differs from that used for determining company experience mortality rates as described in Subsection 9.C.2.g, as the industry basic tables have already been improved from the mid-

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point of the exposure period of the data underlying the table to the start date of the table—e.g., the 2015 VBT has already been improved from the mid-point of the underlying data supporting the table to 2015.

4. Credibility of Company Experience

   a. For valuations in which the industry basic mortality table is the 2008 VBT, determine an aggregate level of credibility over the entire exposure period using a methodology to determine the level of credibility that follows common actuarial practice as published in actuarial literature (for example but not limited to the Limited Fluctuation Method or Bühlmann Empirical Bayesian Method method).

   For valuations in which the industry basic mortality table is the 2015 VBT, determine an aggregate level of credibility following either the Limited Fluctuation Method by amount, such that the minimum probability is at least 95% with an error margin of no more than 5% or Bühlmann Empirical Bayesian Method by amount. Once chosen, the credibility method must be applied to all business subject to VM-20 and requiring credibility percentages. A company seeking to change credibility methods must request and subsequently receive the approval of the commissioner. The request must include the justification for the change and a demonstration of the rationale supporting the change.

   The formula to determine the credibility level by amount under the Limited Fluctuation Method is as follows:

   Limited Fluctuation Z = min{1, rm/zσ}

   where,

   r = error margin ≤ 5%
   z = normal distribution quantile ≥ 95%
   m = mortality ratio i.e. A/E ratio by amount
   σ = standard deviation of the mortality ratio

   The following formula can be utilized in conjunction with the 2015 VBT industry basic table to directly approximate the credibility based on the Buhlmann Empirical Bayesian Method:

$$\text{Bühlmann Z} = \frac{\text{A}}{\text{A} + \frac{(109\% * \text{B}) - (120.4\% * C)}{(0.019604 * A)}}$$

   where,

   A = Sum of expected deaths by amount = Σ (amount insured) x (exposure) x (mortality)
   B = Σ(amount insured)² x (exposure) x (mortality)
   C = Σ(amount insured)² x (exposure)² x (mortality)²

   b. Credibility may be determined at either the mortality segment level or at a more aggregate level if the mortality for the sub-classes (mortality segments) was determined using an aggregate level of mortality experience.

   c. A single level of credibility shall be determined over the entire exposure period, rather than for each duration within the exposure period. This overall level of credibility will be used to:

      i. Determine the prescribed margin for company experience mortality rates.

      ii. Determine the grading period (shown in column (1) in table in Subsection 9.C.6.iii) for grading company experience mortality rates into the applicable industry basic table.

5. Prescribed Mortality Margins

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a. Separate prescribed margins will be added to company experience mortality rates, and to the applicable industry basic tables. The mortality margin shall be in the form of a prescribed percentage increase applied to each mortality rate.

b. The prescribed margin percentages for the company experience mortality rates will vary by attained age (att age), by the level of credibility of the underlying company experience, based on the level of credibility and the method used to determine the credibility in subsection 9.C.4. The percentages are given in the following tables. To determine the margin percentage for each table, round the credibility level amount to the nearest whole integer.

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(i) For valuations in which the industry mortality table is the 2008 VBT limited underwriting table:

	Credibility Level				
att age	0-19%	20-39%	40-59%	60-79%	80-100%
<45	21.0%	13.7%	8.4%	6.3%	5.3%
46-47	20.0%	13.0%	8.0%	6.0%	5.0%
48-49	19.0%	12.4%	7.6%	5.7%	4.8%
50-51	18.0%	11.7%	7.2%	5.4%	4.5%
52-53	17.0%	11.1%	6.8%	5.1%	4.3%
54-55	16.0%	10.4%	6.4%	4.8%	4.0%
56-57	15.0%	9.8%	6.0%	4.5%	3.8%
58-59	14.0%	9.1%	5.6%	4.2%	3.5%
60-61	13.0%	8.5%	5.2%	3.9%	3.3%
62-63	12.0%	7.8%	4.8%	3.6%	3.0%
64-68	11.0%	7.2%	4.4%	3.3%	2.8%
69-76	10.0%	6.5%	4.0%	3.0%	2.5%
77+	9.0%	5.9%	3.6%	2.7%	2.3%

(ii) For valuations in which the industry mortality table is the 2015 VBT and where the credibility is determined using the Bühlmann Empirical Bayesian Method by amount method:

Buhlmann Margins												
	Credibility Level											
Att Age	0-7%	8-12%	13-17%	18-22%	23-27%	28-32%	33-37%	38-42%	43-47%	48-52%	53-57%	58-62%
<47	20.4%	20.4%	20.4%	20.4%	20.0%	19.3%	18.6%	17.9%	17.1%	16.3%	15.5%	14.6%
46 to 47	20.2%	20.2%	20.2%	20.2%	20.0%	19.3%	18.6%	17.9%	17.1%	16.3%	15.5%	14.6%
48 to 49	20.0%	20.0%	20.0%	20.0%	19.7%	19.1%	18.4%	17.6%	16.9%	16.1%	15.3%	14.4%
50 to 51	19.8%	19.8%	19.8%	19.8%	19.4%	18.8%	18.1%	17.4%	16.7%	15.9%	15.1%	14.2%
52 to 53	19.6%	19.6%	19.6%	19.6%	19.1%	18.5%	17.8%	17.1%	16.4%	15.6%	14.8%	14.0%
54 to 55	19.2%	19.2%	19.2%	19.2%	18.8%	18.2%	17.5%	16.8%	16.1%	15.4%	14.6%	13.7%
56 to 57	18.9%	18.9%	18.9%	18.9%	18.5%	17.9%	17.2%	16.5%	15.8%	15.1%	14.3%	13.5%
58 to 59	18.5%	18.5%	18.5%	18.5%	18.1%	17.5%	16.9%	16.2%	15.5%	14.8%	14.1%	13.2%
60 to 61	18.2%	18.2%	18.2%	18.2%	17.8%	17.2%	16.5%	15.9%	15.2%	14.5%	13.8%	13.0%
62 to 63	17.8%	17.8%	17.8%	17.8%	17.4%	16.8%	16.2%	15.6%	14.9%	14.2%	13.5%	12.7%
64 to 65	17.4%	17.4%	17.4%	17.4%	17.0%	16.4%	15.8%	15.2%	14.6%	13.9%	13.2%	12.4%
66 to 67	16.9%	16.9%	16.9%	16.9%	16.6%	16.0%	15.4%	14.8%	14.2%	13.5%	12.8%	12.1%
68 to 69	16.5%	16.5%	16.5%	16.5%	16.2%	15.6%	15.0%	14.5%	13.8%	13.2%	12.5%	11.8%
70 to 71	16.1%	16.1%	16.1%	16.1%	15.7%	15.2%	14.6%	14.1%	13.5%	12.8%	12.2%	11.5%
72 to 73	15.6%	15.6%	15.6%	15.6%	15.3%	14.7%	14.2%	13.7%	13.1%	12.5%	11.8%	11.1%
74 to 75	15.1%	15.1%	15.1%	15.1%	14.8%	14.3%	13.8%	13.2%	12.7%	12.1%	11.5%	10.8%
76 to 77	14.6%	14.6%	14.6%	14.6%	14.3%	13.8%	13.3%	12.8%	12.2%	11.7%	11.1%	10.4%
78 to 79	14.1%	14.1%	14.1%	14.1%	13.8%	13.3%	12.8%	12.3%	11.8%	11.3%	10.7%	10.1%
80 to 81	13.6%	13.6%	13.6%	13.6%	13.3%	12.8%	12.4%	11.9%	11.4%	10.8%	10.3%	9.7%
82 to 83	13.0%	13.0%	13.0%	13.0%	12.7%	12.3%	11.9%	11.4%	10.9%	10.4%	9.9%	9.3%
84 to 85	12.5%	12.5%	12.5%	12.5%	12.2%	11.8%	11.4%	10.9%	10.4%	10.0%	9.4%	8.9%
86 to 87	11.9%	11.9%	11.9%	11.9%	11.6%	11.2%	10.8%	10.4%	10.0%	9.5%	9.0%	8.5%
88 to 89	11.3%	11.3%	11.3%	11.3%	11.1%	10.7%	10.3%	9.9%	9.5%	9.0%	8.6%	8.1%
90 to 91	10.7%	10.7%	10.7%	10.7%	10.5%	10.1%	9.7%	9.4%	9.0%	8.5%	8.1%	7.6%
92 to 93	10.1%	10.1%	10.1%	10.1%	9.8%	9.5%	9.2%	8.8%	8.4%	8.0%	7.6%	7.2%
94 to 95	9.4%	9.4%	9.4%	9.4%	9.2%	8.9%	8.6%	8.3%	7.9%	7.5%	7.1%	6.7%
96 to 97	8.8%	8.8%	8.8%	8.8%	8.6%	8.3%	8.0%	7.7%	7.4%	7.0%	6.6%	6.3%
98 to 99	8.1%	8.1%	8.1%	8.1%	7.9%	7.7%	7.4%	7.1%	6.8%	6.5%	6.1%	5.8%
100 to 101	7.4%	7.4%	7.4%	7.4%	7.3%	7.0%	6.8%	6.5%	6.2%	5.9%	5.6%	5.3%
102 to 103	6.7%	6.7%	6.7%	6.7%	6.6%	6.3%	6.1%	5.9%	5.6%	5.4%	5.1%	4.8%
104 to 105	6.0%	6.0%	6.0%	6.0%	5.9%	5.7%	5.5%	5.2%	5.0%	4.8%	4.5%	4.3%
106 and over 107	5.3%	5.3%	5.3%	5.3%	5.1%	5.0%	4.8%	4.6%	4.4%	4.2%	4.0%	3.8%

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Buhlmann Margins												
Credibility Level												
Att Age	63-67%	68-72%	73-77%	78-82%	83-87%	88-89%	90-91%	92-93%	94-95%	96-97%	98%	99%+
<47	13.7%	12.7%	11.6%	10.3%	8.9%	8.0%	7.3%	6.5%	5.7%	4.6%	3.3%	2.3%
46 to 47	13.7%	12.7%	11.6%	10.3%	8.9%	8.0%	7.3%	6.5%	5.7%	4.6%	3.3%	2.3%
48 to 49	13.5%	12.5%	11.4%	10.2%	8.8%	7.9%	7.2%	6.4%	5.6%	4.6%	3.2%	2.3%
50 to 51	13.3%	12.3%	11.2%	10.0%	8.7%	7.8%	7.1%	6.4%	5.5%	4.5%	3.2%	2.2%
52 to 53	13.1%	12.1%	11.1%	9.9%	8.6%	7.7%	7.0%	6.3%	5.4%	4.4%	3.1%	2.2%
54 to 55	12.9%	11.9%	10.9%	9.7%	8.4%	7.5%	6.9%	6.1%	5.3%	4.3%	3.1%	2.2%
56 to 57	12.6%	11.7%	10.7%	9.5%	8.3%	7.4%	6.8%	6.0%	5.2%	4.3%	3.0%	2.1%
58 to 59	12.4%	11.5%	10.5%	9.4%	8.1%	7.3%	6.6%	5.9%	5.1%	4.2%	3.0%	2.1%
60 to 61	12.1%	11.2%	10.3%	9.2%	7.9%	7.1%	6.5%	5.8%	5.0%	4.1%	2.9%	2.1%
62 to 63	11.9%	11.0%	10.0%	9.0%	7.8%	7.0%	6.4%	5.7%	4.9%	4.0%	2.8%	2.0%
64 to 65	11.6%	10.8%	9.8%	8.8%	7.6%	6.8%	6.2%	5.6%	4.8%	3.9%	2.8%	2.0%
66 to 67	11.3%	10.5%	9.6%	8.6%	7.4%	6.6%	6.1%	5.4%	4.7%	3.8%	2.7%	1.9%
68 to 69	11.0%	10.2%	9.3%	8.3%	7.2%	6.5%	5.9%	5.3%	4.6%	3.7%	2.6%	1.9%
70 to 71	10.7%	9.9%	9.1%	8.1%	7.0%	6.3%	5.7%	5.1%	4.4%	3.6%	2.6%	1.8%
72 to 73	10.4%	9.7%	8.8%	7.9%	6.8%	6.1%	5.6%	5.0%	4.3%	3.5%	2.5%	1.8%
74 to 75	10.1%	9.4%	8.5%	7.6%	6.6%	5.9%	5.4%	4.8%	4.2%	3.4%	2.4%	1.7%
76 to 77	9.8%	9.0%	8.3%	7.4%	6.4%	5.7%	5.2%	4.7%	4.0%	3.3%	2.3%	1.7%
78 to 79	9.4%	8.7%	8.0%	7.1%	6.2%	5.5%	5.0%	4.5%	3.9%	3.2%	2.3%	1.6%
80 to 81	9.1%	8.4%	7.7%	6.9%	5.9%	5.3%	4.9%	4.3%	3.8%	3.1%	2.2%	1.5%
82 to 83	8.7%	8.1%	7.4%	6.6%	5.7%	5.1%	4.7%	4.2%	3.6%	2.9%	2.1%	1.5%
84 to 85	8.3%	7.7%	7.0%	6.3%	5.5%	4.9%	4.5%	4.0%	3.5%	2.8%	2.0%	1.4%
86 to 87	7.9%	7.4%	6.7%	6.0%	5.2%	4.7%	4.2%	3.8%	3.3%	2.7%	1.9%	1.3%
88 to 89	7.6%	7.0%	6.4%	5.7%	4.9%	4.4%	4.0%	3.6%	3.1%	2.6%	1.8%	1.3%
90 to 91	7.1%	6.6%	6.0%	5.4%	4.7%	4.2%	3.8%	3.4%	3.0%	2.4%	1.7%	1.2%
92 to 93	6.7%	6.2%	5.7%	5.1%	4.4%	3.9%	3.6%	3.2%	2.8%	2.3%	1.6%	1.1%
94 to 95	6.3%	5.8%	5.3%	4.8%	4.1%	3.7%	3.4%	3.0%	2.6%	2.1%	1.5%	1.1%
96 to 97	5.9%	5.4%	5.0%	4.4%	3.8%	3.4%	3.1%	2.8%	2.4%	2.0%	1.4%	1.0%
98 to 99	5.4%	5.0%	4.6%	4.1%	3.5%	3.2%	2.9%	2.6%	2.2%	1.8%	1.3%	0.9%
100 to 101	5.0%	4.6%	4.2%	3.7%	3.2%	2.9%	2.6%	2.4%	2.1%	1.7%	1.2%	0.8%
102 to 103	4.5%	4.2%	3.8%	3.4%	2.9%	2.6%	2.4%	2.1%	1.9%	1.5%	1.1%	0.8%
104 to 105	4.0%	3.7%	3.4%	3.0%	2.6%	2.3%	2.1%	1.9%	1.7%	1.4%	1.0%	0.7%
106 and over 107	3.5%	3.3%	3.0%	2.7%	2.3%	2.1%	1.9%	1.7%	1.5%	1.2%	0.8%	0.6%

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(iii) For valuations in which the industry mortality table is the 2015 VBT and where the credibility is determined using the Limited Fluctuation by amount method:

Proposed Limited Fluctuation Margins										
	Credibility Level									
Att Age	0-7%	8-12%	13-17%	18-22%	23-27%	28-32%	33-37%	38-42%	43-47%	48-52%
<45	20.4%	20.4%	17.4%	15.9%	14.5%	13.2%	12.1%	11.0%	10.0%	9.1%
46 to 47	20.2%	20.2%	17.4%	15.9%	14.5%	13.2%	12.1%	11.0%	10.0%	9.1%
48 to 49	20.0%	20.0%	17.2%	15.7%	14.3%	13.0%	11.9%	10.8%	9.9%	9.0%
50 to 51	19.8%	19.8%	17.0%	15.5%	14.1%	12.9%	11.7%	10.7%	9.7%	8.9%
52 to 53	19.6%	19.6%	16.7%	15.2%	13.9%	12.7%	11.5%	10.5%	9.6%	8.7%
54 to 55	19.2%	19.2%	16.4%	15.0%	13.6%	12.4%	11.3%	10.3%	9.4%	8.6%
56 to 57	18.9%	18.9%	16.1%	14.7%	13.4%	12.2%	11.1%	10.2%	9.3%	8.5%
58 to 59	18.5%	18.5%	15.8%	14.4%	13.1%	12.0%	10.9%	10.0%	9.1%	8.3%
60 to 61	18.2%	18.2%	15.5%	14.1%	12.9%	11.7%	10.7%	9.8%	8.9%	8.1%
62 to 63	17.8%	17.8%	15.2%	13.8%	12.6%	11.5%	10.5%	9.6%	8.7%	8.0%
64 to 65	17.4%	17.4%	14.8%	13.5%	12.3%	11.2%	10.2%	9.3%	8.5%	7.8%
66 to 67	16.9%	16.9%	14.5%	13.2%	12.0%	11.0%	10.0%	9.1%	8.3%	7.6%
68 to 69	16.5%	16.5%	14.1%	12.8%	11.7%	10.7%	9.7%	8.9%	8.1%	7.4%
70 to 71	16.1%	16.1%	13.7%	12.5%	11.4%	10.4%	9.5%	8.6%	7.9%	7.2%
72 to 73	15.6%	15.6%	13.3%	12.1%	11.1%	10.1%	9.2%	8.4%	7.7%	7.0%
74 to 75	15.1%	15.1%	12.9%	11.8%	10.7%	9.8%	8.9%	8.1%	7.4%	6.8%
76 to 77	14.6%	14.6%	12.5%	11.4%	10.4%	9.5%	8.6%	7.9%	7.2%	6.5%
78 to 79	14.1%	14.1%	12.0%	11.0%	10.0%	9.1%	8.3%	7.6%	6.9%	6.3%
80 to 81	13.6%	13.6%	11.6%	10.6%	9.6%	8.8%	8.0%	7.3%	6.7%	6.1%
82 to 83	13.0%	13.0%	11.1%	10.1%	9.2%	8.4%	7.7%	7.0%	6.4%	5.8%
84 to 85	12.5%	12.5%	10.6%	9.7%	8.8%	8.1%	7.4%	6.7%	6.1%	5.6%
86 to 87	11.9%	11.9%	10.1%	9.2%	8.4%	7.7%	7.0%	6.4%	5.8%	5.3%
88 to 89	11.3%	11.3%	9.6%	8.8%	8.0%	7.3%	6.7%	6.1%	5.5%	5.1%
90 to 91	10.7%	10.7%	9.1%	8.3%	7.6%	6.9%	6.3%	5.7%	5.2%	4.8%
92 to 93	10.1%	10.1%	8.6%	7.8%	7.1%	6.5%	5.9%	5.4%	4.9%	4.5%
94 to 95	9.4%	9.4%	8.0%	7.3%	6.7%	6.1%	5.6%	5.1%	4.6%	4.2%
96 to 97	8.8%	8.8%	7.5%	6.8%	6.2%	5.7%	5.2%	4.7%	4.3%	3.9%
98 to 99	8.1%	8.1%	6.9%	6.3%	5.7%	5.2%	4.8%	4.4%	4.0%	3.6%
100 to 101	7.4%	7.4%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%	3.6%	3.3%
102 to 103	6.7%	6.7%	5.7%	5.2%	4.8%	4.3%	4.0%	3.6%	3.3%	3.0%
104 to 105	6.0%	6.0%	5.1%	4.7%	4.3%	3.9%	3.5%	3.2%	2.9%	2.7%
106 and over 107	5.3%	5.3%	4.5%	4.1%	3.7%	3.4%	3.1%	2.8%	2.6%	2.4%

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Proposed Limited Fluctuation Margins									
	Credibility Level								
Att Age	53-57%	58-62%	63-67%	68-72%	73-77%	78-82%	83-87%	88-92%	93-100%
<45	8.3%	7.6%	6.9%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%
46 to 47	8.3%	7.6%	6.9%	6.3%	5.8%	5.3%	4.8%	4.4%	4.0%
48 to 49	8.2%	7.5%	6.8%	6.2%	5.7%	5.2%	4.7%	4.3%	3.9%
50 to 51	8.1%	7.4%	6.7%	6.1%	5.6%	5.1%	4.7%	4.2%	3.9%
52 to 53	8.0%	7.3%	6.6%	6.0%	5.5%	5.0%	4.6%	4.2%	3.8%
54 to 55	7.8%	7.2%	6.5%	5.9%	5.4%	4.9%	4.5%	4.1%	3.8%
56 to 57	7.7%	7.0%	6.4%	5.8%	5.3%	4.9%	4.4%	4.0%	3.7%
58 to 59	7.6%	6.9%	6.3%	5.7%	5.2%	4.8%	4.3%	4.0%	3.6%
60 to 61	7.4%	6.8%	6.2%	5.6%	5.1%	4.7%	4.3%	3.9%	3.5%
62 to 63	7.2%	6.6%	6.0%	5.5%	5.0%	4.6%	4.2%	3.8%	3.5%
64 to 65	7.1%	6.5%	5.9%	5.4%	4.9%	4.5%	4.1%	3.7%	3.4%
66 to 67	6.9%	6.3%	5.7%	5.2%	4.8%	4.4%	4.0%	3.6%	3.3%
68 to 69	6.7%	6.1%	5.6%	5.1%	4.7%	4.2%	3.9%	3.5%	3.2%
70 to 71	6.6%	6.0%	5.4%	5.0%	4.5%	4.1%	3.8%	3.4%	3.1%
72 to 73	6.4%	5.8%	5.3%	4.8%	4.4%	4.0%	3.7%	3.3%	3.0%
74 to 75	6.2%	5.6%	5.1%	4.7%	4.3%	3.9%	3.5%	3.2%	2.9%
76 to 77	6.0%	5.4%	5.0%	4.5%	4.1%	3.8%	3.4%	3.1%	2.9%
78 to 79	5.8%	5.2%	4.8%	4.4%	4.0%	3.6%	3.3%	3.0%	2.8%
80 to 81	5.5%	5.0%	4.6%	4.2%	3.8%	3.5%	3.2%	2.9%	2.6%
82 to 83	5.3%	4.8%	4.4%	4.0%	3.7%	3.4%	3.1%	2.8%	2.5%
84 to 85	5.1%	4.6%	4.2%	3.9%	3.5%	3.2%	2.9%	2.7%	2.4%
86 to 87	4.8%	4.4%	4.0%	3.7%	3.4%	3.1%	2.8%	2.5%	2.3%
88 to 89	4.6%	4.2%	3.8%	3.5%	3.2%	2.9%	2.6%	2.4%	2.2%
90 to 91	4.4%	4.0%	3.6%	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%
92 to 93	4.1%	3.7%	3.4%	3.1%	2.8%	2.6%	2.4%	2.2%	2.0%
94 to 95	3.8%	3.5%	3.2%	2.9%	2.7%	2.4%	2.2%	2.0%	1.8%
96 to 97	3.6%	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%
98 to 99	3.3%	3.0%	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%
100 to 101	3.0%	2.8%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%	1.4%
102 to 103	2.7%	2.5%	2.3%	2.1%	1.9%	1.7%	1.6%	1.4%	1.3%
104 to 105	2.4%	2.2%	2.0%	1.9%	1.7%	1.5%	1.4%	1.3%	1.2%
106 and over 107	2.1%	2.0%	1.8%	1.6%	1.5%	1.4%	1.2%	1.1%	1.0%

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c. The prescribed margin percentages for the applicable industry basic tables will vary by attained age and are as follows:

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(i) For valuations in which the industry mortality table is the 2008 VBT limited underwriting table:

Mortality Margin Table

Attained Age	Load	Attained Age	Load
< 40	21%	65	11%
40	21%	66	11%
41	21%	67	11%
42	21%	68	11%
43	21%	69	10%
44	21%	70	10%
45	21%	71	10%
46	20%	72	10%
47	20%	73	10%
48	19%	74	10%
49	19%	75	10%
50	18%	76	10%
51	18%	77	9%
52	17%	78	9%
53	17%	79	9%
54	16%	80	9%
55	16%	81	9%
56	15%	82	9%
57	15%	83	9%
58	14%	84	9%
59	14%	85	9%
60	13%	86	9%
61	13%	87	9%
62	12%	88	9%
63	12%	89	9%
64	11%	90	9%

(ii) For valuations in which the industry table is the 2015 VBT:

Mortality Margin (Loading) for Industry Table											
Attained Age			Load	Attained Age			Load
0	to	45	20.4%	76	to	77	14.6%
46	to	47	20.2%	78	to	79	14.1%
48	to	49	20.0%	80	to	81	13.6%
50	to	51	19.8%	82	to	83	13.0%
52	to	53	19.6%	84	to	85	12.5%
54	to	55	19.2%	86	to	87	11.9%
56	to	57	18.9%	88	to	89	11.3%
58	to	59	18.5%	90	to	91	10.7%
60	to	61	18.2%	92	to	93	10.1%
62	to	63	17.8%	94	to	95	9.4%
64	to	65	17.4%	96	to	97	8.8%
66	to	67	16.9%	98	to	99	8.1%
68	to	69	16.5%	100	to	101	7.4%
70	to	71	16.1%	102	to	103	6.7%
72	to	73	15.6%	104	to	105	6.0%
74	to	75	15.1%	106	and	over	5.3%

d. The prescribed margin percentages shall be increased, as appropriate, to reflect the level of uncertainty related to situations, including, but not limited to, the following:

i. The reliability of the company's experience studies is low due to imprecise methodology, length of time since the data was updated or other reasons.

ii. The longer the time since the experience data was updated.

iii. The underwriting or risk selection risk criteria associated with the mortality segment have changed since the experience on which the company experience mortality rates are based was collected.

iv. The data underlying the company experience mortality rates lack homogeneity.

v. Unfavorable environmental or health developments are unfolding and are expected to have a material and sustained impact on the insured population.

vi. Changes to the company's marketing or administrative practices or market forces expose the policies to the risk of anti-selection.

Guidance Note: For example, the secondary market for life insurance policies.

vii. Underwriting is less effective than expected.

6. Process to Determine Prudent Estimate Assumptions

a. If applicable industry basic tables are used in lieu of company experience, the prudent estimate assumptions for each mortality segment shall equal the respective mortality rates in the applicable industry basic tables as provided in subsection 9.C.3, plus the prescribed margin as provided in subsection 9.C.5.c.

b. If the company determines company experience mortality rates, the prudent estimate assumptions will be determined as follows:

i. For each mortality segment, use the company experience mortality rates (as defined in Subsection 9.C.2) for policy durations in which there exists sufficient company experience data (as defined below in paragraph ii), plus the prescribed margin as provided in subsection 9.C.5.b.

ii. The company shall determine the sufficient data period by identifying the last policy duration at which sufficient company experience data exists (using all the sources defined in Subsection 9.C.2.b). This period ends at the last policy duration which has 50 or more claims (i.e., no duration beyond this point has 50 claims or more). The sufficient data period may be determined at a more aggregate level than the mortality segment if the company based its mortality on aggregate experience and then used a methodology to subdivide the aggregate class into various sub-classes or mortality segments.

Guidance Note: The objective is to use last duration at which there are 50 or more claims; not the first duration in which there are less than 50 claims.

iii. Beginning in the policy duration at which sufficient company experience data no longer exists, use the guidelines in the applicable table below to linearly grade from the company experience mortality rates with margins to 100% of the applicable industry basic table with margins (the determination of the applicable industry basic table is described in Section 9.C.3). Grading must begin and end no later than the policy durations shown in the applicable table below, based on the level of credibility of the data as provided in subsection 9.C.4. For valuations on or after 1/1/2015, if the credibility level is less than 20%, the company is not allowed to use its company experience and must use 100% of the applicable industry table.

A. The number of years for data to be considered sufficient is equal to the length of the sufficient data period (defined in paragraph ii above) but no greater than the number of years in column (2).

B. Grading must begin no later than the number of years in column (3) after the duration when sufficient data no longer exists (as defined in paragraph (A) above).

C. Grading to 100% of the industry table must be completed no later than the number of years in column (4) after the duration when sufficient data no longer exists (as defined in paragraph (A) above).

Table effective for valuations December 31, 2016 and prior:

Credibility of company data (as defined in Section 9.C.4 above)	Maximum # of years for data to be considered sufficient	Maximum # of years in which to begin grading after sufficient data no longer exists	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists)
(1)	(2)	(3)	(4)
10-19%	10	2	10
20-39%	20	4	15
40-59%	30	6	18
60-79%	40	8	20
80-100%	50	10	25

Table effective for valuations on and after January 1, 2017:

Credibility of company data (as defined in Section 9.C.4 above)	Maximum # of years for data to be considered sufficient	Maximum # of years in which to begin grading after sufficient data no longer exists	Maximum # of years in which the assumption must grade to 100% to an applicable industry table (from the duration where sufficient data no longer exists)*
(1)	(2)	(3)	(4)
20-39%	10	2	8*
40-59%	20	4	12*
60-79%	35	7	17*
80-100%	50	10	25*

* Additional standards for valuations on and after January 1, 2017:

The maximum # of years in which the assumption must grade to 100% of an applicable industry table shall be the lesser of (a) the appropriate number of years stated in the chart above or (b) the number of years of sufficient data + 15 times the credibility percentage applicable to column (1) in the chart above. This maximum # of years figure shall be rounded to the nearest whole number.

For example, if the number of years of sufficient data was 9 and the credibility percentage over the sufficient data period was 80%, (b) would equal 9 + 15 * (80%) = 21. The maximum # of years in which the assumption must grade to 100% of an applicable industry table (from the duration where sufficient data no longer exists) would therefore be 21.

iv. Notwithstanding the guidelines in paragraph b.iii. above, the company must grade into 100% of the applicable industry table mortality with margins by the later of attained age 100 or 15 years after policy underwriting.

c. Smoothing may be utilized within each mortality segment to ensure that an appropriate relationship exists by attained age within each mortality segment.

d. The company may adjust the resulting mortality rates within each mortality segment to ensure the resulting prudent estimate produces a reasonable relationship with assumptions in other mortality

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segments that reflects the underwriting class or risk class of each mortality segment. Such adjustments must be done in a manner that does not result in a material change in total expected claims for all mortality segments in the aggregate.

e. Adjust the prudent estimate mortality assumptions to reflect differences associated with impaired lives, and differences due to policyholder behavior if there is a reasonable expectation that due to conditions such as changes in premiums or other policy provisions, policyholder behavior will lead to mortality results that vary from the mortality results that would otherwise be expected.

   i. The adjustment for impaired lives shall follow established actuarial practice, including the use of mortality adjustments determined from clinical and other data.

   ii. The adjustment for policyholder behavior shall follow common actuarial practice, including the use of dynamic adjustments to base mortality.

7. Anticipated Experience Assumptions

a. Anticipated experience assumptions shall be the Company Experience Mortality Rates described in Section C.2 (which excludes prescribed margins). If the company elects to use an applicable industry basic table in lieu of its own company experience, as described in Section C.2.a., then the anticipated experience assumptions shall be the applicable industry basic table (which excludes prescribed margins).

b. The resulting anticipated experience assumptions must be no lower than the mortality rates that are actually expected to emerge and that the company can justify. The company must disclose this conclusion in the PBR Actuarial Report.

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Deleted: be determined by removing the prescribed margin from the prudent estimate assumption determined above.

Deleted: 7. . Determination of Mortality Margin¶

¶

a. . The mortality margin shall be in the form of a percentage increase applied to the Anticipated Experience Assumption.¶

¶

b. . This margin shall be increased, as appropriate, to reflect the level of uncertainty related to situations, including, but not limited to, the following:¶

¶

i. . The reliability of the company's experience studies is low due to imprecise methodology, length of time since the data was updated or other reasons. ¶

¶

ii. . The longer the time since the experience data was updated.¶

¶

iii. . The underwriting or risk selection risk criteria associated with the mortality segment have changed since the experience on which the company experience mortality rates are based was collected.¶

¶

iv. . The data underlying the company experience mortality rates lack homogeneity.¶

¶

v. . Unfavorable environmental or health developments are unfolding and are expected to have a material and sustained impact on the insured population.¶

¶

vi. . Changes to the company's marketing or administrative practices or market forces expose the policies to the risk of anti-selection.¶

¶

Guidance Note: For example, the secondary market for life insurance policies.¶

¶

vii. . Underwriting is less effective than expected.¶

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force

Amendment Proposal Form*

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

   Fred Andersen, Minnesota Department of Commerce – Post-level term profits

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, November 16, 2015 adoption – Section 9.D.6.

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.)

   The underlined paragraph will be added to Section 9.D.6.:

   9.D.6. For a term life policy that guarantees level or near level premiums until a specified duration followed by a material premium increase, or for a policy for which level or near level premiums are expected for a period~~,~~ followed by a material premium increase, for the period following that premium increase the lapse and mortality assumptions shall be adjusted, or margins added, such that the present value of cash inflows in excess of cash outflows assumed shall be limited to reflect the relevance and credibility of the experience, approaching zero for periods where the underlying data has low or no credibility or relevance.

   For the calculation of the deterministic reserve, for a term life policy issued 1/1/2017 and later that guarantees level or near level premiums for more than five years until a specified duration followed by a material premium increase, or for a policy for which level or near level premiums are expected for more than five years~~,~~ followed by a material premium increase, for the period following that premium increase the cash inflows or outflows shall be adjusted such that the present value of cash inflows does not exceed the present value of cash outflows.

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

   The November 16, 2015 version of the valuation manual contained a substantial change from previous versions. Previous versions contained a net premium reserves (NPR) floor that contained mortality and post-level term profit assumptions with levels of conservatism that offset each other.

   The November 16, 2015 version contained an NPR with an updated mortality assumption that resulted in significantly lower floor reserves. Several regulators believed that the update to the mortality assumption would be followed up by an update to the post-level term profit assumption prior to the valuation manual becoming effective.

   In late March through early April 2016, many (but not all) LATF members concluded that it was too late to make a change to the NPR prior to valuation manual becoming effective for 2017 but believed a study of possible changes for the 2018 valuation manual was more prudent. Reasons for not making the change for 2017 included the fact that the NPR is one-size-fits-all, and consequences of making a change could not be studied in time for the effect to be known in time for preparing for the initial implementation of PBR.

With the concern, uncertainty, and lack of study regarding post-level term profits, this amendment proposal form addresses the issue in the deterministic reserve (DR) calculation for the 2017 valuation manual instead of in the NPR. Many regulators are concerned that anti-selection (with only unhealthy people paying the higher premiums) will negate any post-level term profits. Any current data may not be relevant as it applies to the environment that will be in place 10 to 30 years from now when policyholders make decisions on whether to pay the higher premiums. Addressing the issue in the DR for 2017 should limit or eliminate the consequences that could have occurred through addressing the issue in the NPR for 2017.

This change would also ensure that PBR will not start out weaker than it otherwise would just because the clock ran out on making a change to the NPR. This ensures the solvency protection will be a top principle. A level playing field regarding the reliance on post-level term profits will also result from adoption of this amendment.

In preparation for the second year of PBR in 2018, the merits of changing the NPR and allowing recognition of post-level term profits in the DR can be studied.

The impact on reserves for 2017 should be low, as ACLI has stated that very low duration 1 reserves are expected regardless of the methodology. These reserves grow by duration, however, and having the NPR and DR clearly require study (and with aspects that possibly result in over-reserving and under-reserving) will increase the chances that parties will engage in these studies and propose subsequent changes based on increased information. Subsequent changes to the DR methodology will be retroactively applied to 2017-issued policies as DR assumptions are not locked in at issue.

A change was made to the first paragraph of this section to add clarification and to provide consistency in wording between the two paragraphs.

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Valuation Manual Review 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-21 Section A April 4, 2016 VM

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.)

VM-21

A. Purpose

These requirements constitute the Commissioner's Annuity Reserve Valuation Method (CARVM) for variable annuity contracts by defining the assumptions and methodologies that will comply with the Standard Valuation Law (SVL). It also applies similar assumptions and methodologies to contracts that contain characteristics similar to those described in the scope, but that are not directly subject to CARVM.

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The contracts subject to these requirements may be aggregated with the contracts subject to Actuarial Guideline XLIII, published in Appendix C of the Accounting Practice and Procedures Manual, for purposes of performing and documenting the reserve calculations.

Guidance Note: It is intended that VM-21 requirements will mirror the requirements of Actuarial Guideline XLIII and reserves for contracts subject to both VM-21 and Actuarial Guideline XLIII may be computed as a single group. If a company chooses to aggregate business subject to AG 43 with business subject to VM-21 in calculating the reserve then the provisions in VM-G apply to this aggregate principle-based reserve valuation.

4. State the reason for the proposed amendment? (You may do this through an attachment.)
   To clarify that variable annuities subject to VM-21 and those subject to AG-43 may be treated as a single block of business for aggregate reserve calculation and for documentation purposes.

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

Leonard Mangini, President, Mangini Actuarial and Risk Advisory LLC
Tim Cardinal, Principal, Actuarial Compass LLC
Arnold A. Dicke, President, AADicke LLC

Title: Potential for Misinterpretation of VM-30 Section 1.A.4- Applicability of AOMR changes at 12/31/2016

Issue Description:

VM-30 Section 1.A.4 currently reads as follows:
"These AOM requirements are applicable to all annual statements filed after the operative date of the Valuation Manual."

A life insurer or fraternal cannot file its December 31, 2016 annual statement before 1/1/17 and thus if the Valuation Manual becomes operative as of 1/1/2017, *as is currently expected*, *the revised AOM requirements contained in VM-30 would apply to the Actuarial Opinion supporting this 2016 filing.*

This APF revises Section 1.A.4 and VM Section III so that the AOM requirements in VM-30 are applicable to annual statements with year-ending dates on or after the Valuation Manual operative date.

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:

Valuation Manual as of 11/22/2015, VM-30 Section 1.A.4; Section III, Actuarial and Report Requirements

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.)

VM-30 1.A.4 should be changed as follows:

"These AOM requirements are applicable to annual statements with a **year-ending date on or after** the operative date of the Valuation Manual. A statement of actuarial opinion on the adequacy of the reserves and related actuarial items and a supporting actuarial memorandum is required each year.

Section III, Actuarial Opinion and Report Requirements, should be changed as follows:

"Requirements regarding the annual actuarial opinion and memorandum pursuant to Section 3 of the NAIC Model Standard Valuation Law (VM-05) are provided in VM-30. **The requirements in VM-30 are applicable to all annual statements with a year-ending date on or after the operative date of the Valuation Manual. Existing actuarial opinion and memorandum requirements continue to apply to all annual statements with a year-ending date before the operative date of the Valuation Manual.**

PBR Report requirements applicable to products or types of products subject to PBR as specified in the Valuation Manual are provided in VM-31."

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   LATF AG48 Drafting 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:

   Valuation Manual – VM-30. Section 1, A, 3

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.)

Section 1. Scope

A. General

1. The following provisions contain the requirements for the actuarial opinion of reserves and for supporting actuarial memoranda in accordance with Section 3 of the Standard Valuation Law, and are collectively referred to as AOM requirements.

2. Actuarial opinion and supporting actuarial memoranda requirements are provided in this VM-30 for companies that file the Life, Accident and Health Annual Statement or the Fraternal Annual Statement. Companies that file the Property and Casualty Annual Statement or the Health Annual Statement will follow the actuarial opinion and supporting actuarial memoranda requirements pursuant to the instructions for those annual statements. Such companies are not subject to actuarial opinion and supporting actuarial memoranda requirements in this VM-30 unless the instructions for the Property and Casualty Annual Statement or the instructions for the Health Annual Statement provide for requirements in VM-30.

Guidance Note: It is the intent to allow the annual statement instructions to address all issues relating to the actuarial opinion and memorandum for these two statements (Property and Casualty Annual Statement and the Health Annual Statement), but not preclude the use of requirements as appropriate in VM-30 in the instructions for these two statements.

3. The AOM requirements shall be applied in a manner that allows the appointed actuary to utilize his or her professional judgment in performing the actuarial analysis and developing the actuarial opinion and supporting actuarial memoranda, conforming to relevant actuarial standards of practice. However, a state commissioner has the authority to specify methods of analysis and assumptions when, in the commissioner's judgment, these specifications are necessary for the actuary to render an acceptable opinion relative to the adequacy of reserves and related actuarial items. For purposes of this VM-30 the requirements of Actuarial Guideline 48, Accounting Practices and Procedures Manual, Appendix C, shall be applicable.

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Guidance Note: It is expected that AG 48 will be modified after 12/31/16 to coordinate with the Credit for Reinsurance Model. In the event that the coordination leads to a renumbering of the Actuarial Guideline, VM-30 must be updated to reflect the new number.

4. These AOM requirements are applicable to all annual statements filed after the operative date of the Valuation Manual. A statement of actuarial opinion on the adequacy of the reserves and related actuarial items and a supporting actuarial memorandum is required each year.

5. The requirements for an opinion apply to each company filing an annual statement, not to the holding company or group of companies. A single opinion is required for the company.

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

To have VM-30 include the requirements of AG48 as applicable for actuarial opinions pursuant to the Valuation Manual.

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NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Linda Lankowski, Member, American Academy of Actuaries Role of the Actuary Subgroup. Changes to VM-31 to clarify the preparation of the PBR Actuarial Report under certain circumstances, such as when more than one qualified actuary has been assigned responsibilities under VM-G.

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:

   Section VM-31 of the Valuation Manual, draft dated February 25, 2016.

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.)

   See attachment.

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

   Section 12.B.1 of the Standard Valuation Law requires companies to establish procedures for corporate governance and oversight of the actuarial valuation function consistent with those described in the Valuation Manual. Amendments to Section VM-G of the Valuation Manual require that the company assign certain responsibilities to one or more qualified actuaries with respect to the principle-based approach to the calculation of reserves, including the responsibility for overseeing the calculation process and the responsibility for reviewing and approving assumptions, methods, and models that are used in determining principle-based reserves, and the responsibility for preparing the PBR Actuarial Report described in Section VM-31 of the Valuation Manual.

   The changes proposed in this APF to Section VM-31 are needed to clarify how the last-mentioned responsibility (to prepare the PBR Actuarial Report) is carried out, particularly in situations where more than one qualified actuary has been assigned responsibilities under VM-G. This could occur, for example, when the company assigns responsibility for different groups of policies to different qualified actuaries. Additionally, clarification of Subsection 3.D.12.c of VM-31 is needed because it currently refers to "the stochastic exclusion modeling test," a term not defined in the Valuation Manual.

   We also propose that the reference to the PBR Actuarial Report in the title of VM-31 be changed to reflect the full name of the report instead of "PBR Report" to be consistent with the text of VM-31.

* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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VM-31 PBR ACTUARIAL REPORT REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLE-BASED RESERVE VALUATION

Section 1. Purpose

These requirements establish the minimum reporting requirements for policies or contracts subject to principle-based reserve valuation under the Standard Valuation Law.

Section 2. General Requirements

A. Each year a company shall prepare, under the direction of one or more qualified actuaries, as assigned by the company under the provisions of VM-G, a principle-based reserve actuarial report (PBR Actuarial Report) if the company computes a deterministic or stochastic reserve as defined in VM-20 for any policy or contract. The PBR Actuarial Report shall consist of one or more sub-reports, each such sub-report covering a group of policies comprised of one or more model segments. Each such sub-report shall be prepared by the qualified actuary assigned responsibility for such group of policies under the provisions of VM-G. The PBR Actuarial Report must include documentation and disclosure sufficient for another actuary qualified in the same practice area to evaluate the work.

A company that does not compute any deterministic or stochastic reserves for a group of policies as a result of the company passing the exclusion tests as defined in VM-20 Section 6 for all policies in that group must develop a sub-report for that group that addresses the requirements of Section 3.D.10, and 3.D.12.c. if applicable.

B. The PBR Actuarial Report must include descriptions of all material decisions made and information used by the company in complying with the minimum reserve requirements and must comply with the minimum documentation and reporting requirements set forth in Section 3.

C. The company shall submit a PBR Actuarial Report to a commissioner upon request.

D. The company shall retain on file, for at least seven (7) years from the date of filing, sufficient documentation so that it will be possible to determine the procedures followed, the analyses performed, the bases for assumptions and the results obtained in a principle-based valuation.

Section 3. PBR Actuarial Report Requirements

A. For purposes of this section.

1. For individual life insurance policies, “principle-based reserves” means that deterministic and/or stochastic reserves were calculated for policies under VM-20.

2. For variable annuity contracts, “principle-based reserves” means that reserves were calculated for contracts under VM-21.

B. The PBR Actuarial Report shall contain a table of contents with associated page numbers.

C. The PBR Actuarial Report shall contain an overview section at the beginning of the report. The overview section shall be submitted to the company’s domiciliary commissioner no later than April 1 of the year following the year to which the PBR Actuarial Report applies and the company shall provide this overview section to any other commissioner upon request. The overview section is a part of the PBR Actuarial Report and is subject to the same confidentiality provisions as the PBR Actuarial Report even when provided separately. The overview section shall include the following:

1. An opening paragraph identifying the qualified actuary that has been assigned by the company to prepare each sub-report of the PBR Actuarial Report, the qualifications of the qualified actuary, and the relationship of the qualified actuary to the company.

2. A description of the policies and/or contracts subject to VM-20 or VM-21 and, for VM-20, the groups of policies covered by each sub-report.

3. The company shall include a copy of Part 1 of theVM-20 Reserve Supplement from the Annual Statement Blank in the PBR Actuarial Report.

4. The company shall include a copy of Part 2 Section 1 of theVM-20 Reserve Supplement from the Annual Statement Blank in the PBR Actuarial Report.

Drafting Note: The VM-20 Reserve Supplement exposed on Nov. 18, 2015 labels the two reserve tables as Part 1 and Part 2 Section 1. The references here will be adjusted as needed based on any changes to labels used in the final adopted Supplement.

5. ~~A~~For each group of policies covered in a sub-report, a description of the risks determined material by the ~~Qualified Actuary~~qualified actuary assigned to that group of policies and associated with policies and/or contracts in that group of policies subject to a principle-based reserve valuation.

6. ~~A~~For each group of policies covered in a sub-report, a description of those areas where the ~~Qualified Actuary~~qualified actuary relied on others for data, assumptions, projections or analysis in determining the principle-based reserves and a reliance statement from each individual on whom the ~~Qualified Actuary~~qualified actuary relied which includes:

   a. The information provided by the individual.

   b. A statement as to the accuracy, completeness or reasonableness, as applicable, of the information provided.

7. For each group of policies covered in a sub-report, a summary of the valuation assumptions and margins for each major product line subject to a principle-based reserve valuation within that group of policies including:

   a. Description of the method used to determine anticipated experience assumptions for each material risk factor, including the degree to which the assumptions are based on experience versus actuarial judgment or other factors, and the source of the experience (e.g., company experience v. industry study).

   b. Description of any significant changes from the prior year in the method used to determine anticipated experience assumptions, and the rationale for the change.

   c. List of key risk and experience reporting elements that the company is tracking in order to monitor changes in experience that will be used to update assumptions and the frequency of the tracking.

   d. Description of the method used to determine margins for each material risk factor.

   e. Description of any significant changes from the prior year in the method used to determine margins, and the rationale for the change.

   f. Disclosure of any valuation assumptions or margins that are inconsistent with risk analysis and management techniques used by the company, a summary of those risk analyses and management techniques with which the assumptions or margins are inconsistent and the rationale for the inconsistency.

   g. Description of any considerations helpful in or necessary to understanding the rationale behind and development of assumptions and margins even if such considerations are not explicitly mentioned in the Valuation Manual.

   Guidance Note: The requirements in C.7 above require an executive summary version of the assumptions and margins. Additional details on assumptions and margins are included in later sections of the PBR Actuarial Report.

8. ~~A~~For each group of policies covered in a sub-report, a summary of the approach used to model the assets supporting the group of policies subject to a principle-based reserve valuation including:

   a. Method used and rationale for allocating the total asset portfolio into multiple segments, if applicable.

   b. Description of the asset portfolio, including the types of assets, duration and their associated quality ratings.

9. A description of the approach used to model risk management strategies (e.g., hedging), and other derivative programs, and a summary and description of any clearly defined hedging strategies.

10. A description of the rationale for determining whether a decision, information, assumption, risk, or other element of a principle-based reserve calculation is material. Such rationale could include such items as a percentage of surplus, a percentage of reserve, or a specific monetary value.

11. Paragraphs certifying that the PBR reserve valuation:

    a. Was calculated in accordance with VM-05 and VM-20.

    b. The assumptions and margins are prudent estimates.

12. A closing paragraph for each group of policies covered by a sub-report, with the signature, title, telephone number and e-mail address of the ~~Qualified Actuary~~qualified actuary, the ~~Company~~company name and address, and the date signed.

D. PBR Actuarial Report Requirements for Individual Life Insurance Policies or Contracts.

The company shall include in the PBR Actuarial Report and in any sub-report thereof:

****

11. The following additional information:

    a. The impact of individual margins on the deterministic reserve for each risk factor, or group of risk factors, that has a material impact on the deterministic reserve determined for each model segment by subtracting (i) from (ii)

       i. The deterministic reserve for all policies, but with the reserve calculated based on the anticipated experience assumption for the risk factor and prudent estimate assumptions for all other risk factors.

       ii. The deterministic reserve as reported.

    b. An estimate of the aggregate impact of all margins on the deterministic reserve for each model segment. This shall be determined for each model segment by subtracting (i) from (ii)

       i. The deterministic reserve for all policies, but with the reserve calculated based on anticipated experience assumptions for all risk factors prior to the addition of any margins.

       ii. The deterministic reserves for all policies as reported.

    c. For purposes of the disclosures required in 11a and 11b above

       i. If the company believes the method used to determine anticipated experience mortality assumptions includes an implicit margin, the company can adjust the anticipated experience assumptions to remove this implicit margin. For example, to the extent the company expects mortality improvement after the valuation date, any such mortality improvement is an implicit margin and therefore is an acceptable adjustment to the anticipated experience assumptions for this

purpose. If any such adjustment is made, the company shall document the rationale and method used to determine the anticipated experience assumption.

ii. Since the company is not required to determine an anticipated experience assumption or a prudent estimate assumption for risk factors that are prescribed for the deterministic reserve (i.e., interest rates movements, equity performance, default costs, and net spreads on reinvestment assets), when determining the impact of margins, the prescribed assumption shall be deemed to be the prudent estimate assumption for the risk factor, and the company can elect to determine an anticipated experience assumption for the risk factor, based on the company's anticipated experience for the risk factor. If this is elected, the company shall document the rationale and method used to determine the anticipated experience assumption. If the mortality segments do not qualify for the simplified method to determine prudent estimate mortality assumptions, the anticipated experience assumption for mortality is the credibility adjusted experience rates.

d. An explanation of how the results of sensitivity tests and varying assumptions were used or considered in developing assumptions including a description of, results of, and action taken with respect to sensitivity tests performed.

e. Description of material risks not fully reflected in cash flow model used to calculate the stochastic reserve including:

i. A description of each element of the cash flow model for which this provision has been made in the stochastic reserve (e.g., risk factors, policy benefits, asset classes, investment strategies, risk mitigation strategies, etc.).

ii. A description of the approach used by the company to provide for these risks in the stochastic reserve outside the cash flow model, and a summary of the rationale for selecting this approach, and the key assumptions justifying the underlying approach.

iii. If there is more than one model element included in this provision, clarifying whether a separate provision was determined for each element, or collectively for groups of two or more elements and explaining the methodology, supporting rationale and key assumptions for how separate provisions were combined.

f. Summary of the impact of aggregation on the stochastic reserve

i. At least once every three (3) years, and in the current year regardless of the three (3) year requirement if the company has made a material change in its risk profile, such as buying or selling a block of business, or entering into a reinsurance arrangement covering the policies subject to these requirements, a company shall disclose the stochastic reserve for each product on a standalone basis listed in the table in Section 3.C.3 and disclose the sum of the stochastic reserves for each product less the sum of the minimum reserves for the products.

ii. With respect to above disclosure, the company shall disclose the nature of any approximations used and the rationale for why the approximations are appropriate.

g. If the company uses a date that precedes the valuation date to calculate the reserves, the company shall explain why the use of such date will not produce a material change in the results if the results were based on the valuation date. Such explanation shall describe the process the qualified actuary used to determine the adjustment, the amount of the adjustment, and the rationale for why the adjustments are appropriate.

h. Description of any approximations, and simplifications, used in reserve calculations

12. Certifications

a. A certification from a duly authorized investment officer that the modeled asset investment strategy is consistent with the company's current investment strategy and an actuarial certification by a

qualified actuary, not necessarily the same qualified actuary that has been assigned responsibility for the PBR Report or this sub-report, regarding the modeling of clearly defined hedging strategies.

b. A certification from senior management certifying that the principle-based valuation complies with VM-G (Corporate Governance Guidance for Principle-Based Reserves).

~~c. Certification of stochastic modeling exclusion test, if applicable.~~

c. Certification, by the qualified actuary assigned responsibility under VM-G for a group of policies that qualifies for exclusion from the requirement to calculate a stochastic reserve under the provisions of VM-20, Section 6.B.1.a.iii, that this group of policies is not subject to material interest rate risk or asset return volatility risk.

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   John Bruins, ACLI, and Pete Weber, Ohio Dept. of Insurance
   modify the documentation of assumptions relative to ERM in VM-31

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-31, Section C.7f. VM-31 Consolidated Changes

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.)

Revision per Pete Weber and ACLI Comments (June 2, 2016)
Disclosure of the key valuation assumptions, other than prescribed assumptions and methods, that are materially inconsistent with the company's overall risk assessment process recognizing potential differences in financial reporting structures. The disclosure should provide a summary of those risk analyses and management techniques with which the assumptions are inconsistent and the rationale for the inconsistency.

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

- The revisions are to make the language consistent with the language of Model 820.
- This change calls for key assumptions to be documented, not an exhaustive list of all potential differences. This can be used to determine if a more detailed review is needed as part of an examination.

Deleted: f. . Disclosure of any valuation assumptions or margins that are inconsistent with risk analysis and management techniques used by the company, a summary of those risk analyses and management techniques with which the assumptions or margins are inconsistent and the rationale for the inconsistency.

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Deleted: and margins

Deleted: analysis and management techniques used by the company

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Deleted: or margins

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* This form is not intended for minor corrections, such as formatting, grammar, cross–references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
Notes:			

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Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force
Amendment Proposal Form*

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

   Valuation Manual Review 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-M

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.)

   See attached

4. State the reason for the proposed amendment? (You may do this through an attachment.)
   To add the 2012 Individual Annuity Reserve Valuation Table to the list of tables in VM-M.

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VM-M: APPENDIX M MORTALITY TABLES

Table of Contents

Deleted: Definitions¶

Definitions

A. "Composite mortality table" means a mortality table with rates of mortality that do not distinguish between smokers and nonsmokers.

B. "Smoker and nonsmoker mortality table" means a mortality table with separate rates of mortality for smokers and nonsmokers.

Section 1. Valuation Mortality Tables

A. 1959 Accidental Death Benefits Table

B. 1961 Commissioners Standard Industrial Mortality Table

Composite Table (1961 CSI)

Proceedings of the NAIC, 1961 Volume II – pages 538- 540

C. 1961 Commissioners Industrial Extended Term Insurance Table

Composite Table (1961 CIET)

Proceedings of the NAIC, 1961 Volume II – pages 541- 543

D. 1980 Commissioners Standard Ordinary Mortality Tables

1. Composite Tables (with optional 10 Ten-Year Select Mortality Factors) (1980 CSO)

Proceedings of the NAIC, 1980 Volume I – page 598

2. Smoker/Nonsmoker tables (1980 CSO NS and 1980 CSO SM)

Proceedings of the NAIC, 1984 – pages 406 – 413

3. Blended tables (1980 CSO B, 1980 CSO C, 1980 CSO D, 1980 CSO E, 1980 CSO F)

Proceedings of the NAIC, 1984 – pages 396 – 400

E. 1980 Commissioners Extended Term Insurance Tables

1. Composite Tables (1980 CET)

Proceedings of the NAIC, 1980 Volume I – page 619

2. Smoker/Nonsmoker tables (1980 CET NS and 1980 CET SM)

Proceedings of the NAIC, 1984 – pages 406 – 413

3. Blended tables (1980 CET B, 1980 CET C, 1980 CET D, 1980 CET E, 1980 CET F)

Proceedings of the NAIC, 1984 – pages 396 – 400

F. 1983 Group Annuity Mortality Table without projection

G. 2001 Commissioners Standard Ordinary Mortality tables (2001 CSO)

1. "2001 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the NAIC in December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002). Unless the context indicates otherwise, the "2001 CSO Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

2. "2001 CSO (F)" means that mortality table consisting of the rates of mortality for female lives from the 2001 CSO Mortality Table.

3. "2001 CSO (M)" means that mortality table consisting of the rates of mortality for male lives from the 2001 CSO Mortality Table.

4. "2001 CSO Preferred Class Structure Mortality Table" means mortality tables with separate rates of mortality for super preferred nonsmokers, preferred nonsmokers, residual standard nonsmokers, preferred smokers, and residual standard smoker splits of the 2001 CSO Nonsmoker and Smoker Tables, as adopted by the NAIC at the September, 2006 national meeting and published in the *NAIC Proceedings {3rd Quarter 2006}*. Unless the context indicates otherwise, the "2001 CSO Preferred Class Structure Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables and the gender composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table.

H. 2017 Commissioners Standard Ordinary Mortality Tables (2017 CSO)

1. "2017 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the CSO Subgroup of the Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group from the 2015 Valuation Basic Mortality Table developed by the joint group's Valuation Basic Mortality Subgroup, and adopted by the NAIC in {November 2015}. The 2017 CSO Mortality Table is included in the Proceedings of the NAIC (XX Quarter 2015). Unless the context indicates otherwise, the "2017 CSO Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite morality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.

2. "2017 CSO (F)" means that the mortality table consisting of the rates of mortality for female lives from the 2017 CSO Mortality Table.

3. "2017 CSO (M)" means that the mortality table consisting of the rates of mortality for male lives from the 2017 CSO Mortality Table.

4. "2017 CSO Preferred Class Structure Mortality Table" means those mortality tables with separate rates of mortality for super preferred nonsmokers, preferred nonsmokers, residual standard nonsmokers, preferred smokers, and residual standard smoker splits of the 2017 CSO Nonsmoker and Smoker Tables as adopted by the NAIC at the {November 2015} National Meeting and published in the *NAIC*

Proceedings {X Quarter2015}. Unless the context indicates otherwise, the "2017 CSO Preferred Class Structure Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table. It includes both the smoker and nonsmoker mortality tables. It includes both the male and female mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality table.

I. 2012 Individual Annuity Reserve Valuation Table

1. Definitions

a. "2012 IAR Table" means that Generational mortality table developed by the Joint American Academy of Actuaries/Society of Actuaries Payout Annuity Table Team and containing rates, q_x^{2012+n}, derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in the "Application of the 2012 IAR Mortality Table" paragraph of Appendix A-821 of the Accounting Practices and Procedures Manual (APPM).

b. "2012 Individual Annuity Mortality Period Life (2012 IAM Period) Table" means the Period table containing loaded mortality rates for calendar year 2012. This table contains rates, q_x^{2012}, developed by the Joint American Academy of Actuaries/Society of Actuaries Payout Annuity Table Team and is shown in Appendices 1-2 of Appendix A-821 of the APPM.

c. "Projection Scale G2 (Scale G2)" is a table of annual rates, $G2_x$, of mortality improvement by age for projecting future mortality rates beyond calendar year 2012. This table was developed by the Joint American Academy of Actuaries/Society of Actuaries Payout Annuity Table Team and is shown in Appendices 3-4 of Appendix A-821 of the APPM.

2. Application of the 2012 IAR Mortality Table

In using the 2012 IAR Mortality Table, the mortality rate for a person age x in year (2012 + n) is calculated as follows:

$$q_x^{2012+n} = q_x^{2012}(1 - G2_x)^n$$

The resulting q_x^{2012+n} shall be rounded to three decimal places per 1,000, e.g., 0.741 deaths per 1,000. Also, the rounding shall occur according to the formula above, starting at the 2012 period table rate.

For example, for a male age 30, q_x^{2012} = 0.741.
q_x^{2013} = 0.741 * (1 – 0.010) ^ 1 = 0.73359, which is rounded to 0.734.
q_x^{2014} = 0.741 * (1 – 0.010) ^ 2 = 0.7262541, which is rounded to 0.726.
A method leading to incorrect rounding would be to calculate q_x^{2014} as q_x^{2013} * (1 – 0.010), or 0.734 * 0.99 = 0.727. It is incorrect to use the already rounded q_x^{2013} to calculate q_x^{2014}.

Section 2. Industry Experience Valuation Basic Tables

1. 2008 Valuation Basic Table (2008 VBT)

Deleted: Society of Actuaries Committee on Life Insurance Research

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Deleted: Society of Actuaries Committee on Life Insurance Research

Deleted: Note: where to include tables of q's and improvement factors from Model 821.¶

2. 2015 Valuation Basic Table (2015 VBT)

The 2015 Valuation Basic Table is a valuation table without loads jointly developed by the Academy and SOA for use in determining a company's Prudent Estimate Mortality Assumption for valuationsof Dec. 31, 2015 and later. The table consists of the Primary Table (Male, Female, Smoker, Non-smoker and Composite), ten Relative Risk tables for non-smokers (male and female) and four Relative Risk tables for smokers (male and female). Rates for juvenile ages are included in the composite tables. The tables are on a select and ultimate and ultimate only basis, and are available on an age nearest and an age last birthday basis.

Drafting Note: The tables were adopted by the Life Actuarial (A) Task Force at the 2015 Summer National Meeting and can be found in the Proceedings of the NAIC, [Vol. pages].