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.

* 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 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.