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 American Academy of Actuaries Life Reserves Work Group.
   Revised VM-31 to reflect changes made to VM-20 since last exposure draft of 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 PBR REPORT REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLE-BASED RESERVE VALUATION. Draft dated 10/17/2010

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, which is a marked up version of the most recent VM-31 draft dated 10/17/10.

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

   Revisions are needed to VM-31 to reflect the many changes made to VM-20 since last exposure draft of VM-31 in October of 2010.

* 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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PBR Report Requirements for Business Subject to a Principle-Based Reserve Valuation - VM-31

Section 3. PBR Actuarial Report Requirements

A. For purposes of this section.

1. F ~~f~~or individual life insurance policies~~, or contracts subject to VM-20 principle-based valuation or~~ "principle-based reserves" means that deterministic and/or stochastic reserves were calculated for policies ~~or contracts~~ 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 that includes 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.

3. 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 polices valued under a principle-based valuation and policies not valued under a principle-based valuation separately:

Product Name	If using PBR, first year used	Current Year Premium	Face Amount
Life Insurance-Issued prior to the operative date of the Valuation Manual			
Term			
Non-participating Whole Life			
Participating Whole Life			
Universal Life without secondary guarantee			
Universal Life with Secondary Guarantee			
Variable Universal Life			
Variable Life			
Indexed Life			
Other			
TOTAL			
Life Insurance-Issued on or after the operative date of the Valuation Manual			
Term			
Non-participating Whole Life			
Participating Whole Life			
Universal Life without secondary guarantee			
Universal Life with Secondary Guarantee			
Variable Universal Life			
Variable Life			
Indexed Life			

Other			
TOTAL			
Annuities			
Fixed			
Variable			
Other			
TOTAL			
Accident and Health Insurance			
[list product types]			
Deposit Type Contracts			
[list product types]			

4. A table, as shown below:

Annual Statement Item	**Direct Reserve (1)**	**Assumed Reserve (2)**	**Ceded Reserve (3)**	**Net Reserve (1)+(2)-(3)**
Life Insurance and Annuity				
Life Insurance-Issued prior to the operative date of the Valuation Manual				
Life Insurance-Issued on or after the operative date of the Valuation Manual				
Policies stochastically modeled per VM-20				
Policies deterministically modeled (not stochastically modeled) per VM-20				
Policies not modeled (non-PBR)				
Net Premium Reserve per VM-20				
Other 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				
Total Accident and Health Insurance				
Deposit Type Contracts				
TOTAL PRINCIPLE-BASED RESERVES				
TOTAL RESERVES (PBR + Non-PBR)				

5. 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.

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. 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 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~~B~~.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 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. 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-base 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-5 and VM-20.

    b. The assumptions and margins are prudent estimates.

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 overview confidential to the same extent and under the same conditions as the PBR Actuarial Report.

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 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:

    a. Groups of polices for which deterministic reserves were calculated but stochastic reserves were not calculated:

Product	**Net Premium Reserve (1)**	**Deterministic Reserve (2)**	**Deferred Premium Asset (3)**	**Reported Reserve (4)**
Term				
Non-participating Whole Life				
Participating Whole Life				
Universal Life without secondary guarantee				
Universal Life with Secondary Guarantee				
Variable Universal Life				
Variable Life				
Indexed Life				
Other				
TOTAL				

Note: The Total Reported Reserve = col (1) + max{0,[col (2)-col(1)+col(3)]}, The Reported Reserve is only calculated in aggregate, not by product type. The allocation of the total Reported Reserve 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 2D of VM-20)~~.~~.

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PBR Report Requirements for Business Subject to a Principle-Based Reserve Valuation - VM-31

b. Groups of policies for which stochastic reserves are calculated:

Product	**Net Premium Reserve (1)**	**Deterministic Reserve (2)**	**CTE 70 Scenario Reserve (3)**	**Addt'l proveision ~~n~~ for risks not captured (4)**	**Stochastic Reserve (5)**	**Deferred Premium Asset (6)**	**Reported Reserve (7)**
Term							
Non-participating Whole Life							
Participating Whole Life							
Universal Life without secondary guarantee							
Universal Life with Secondary Guarantee							
Variable Universal Life							
Variable Life							
Indexed Life							
Other							
TOTAL							
					General Acct		
					Separate Acct		

Note: The Total Reported Reserve = col (1) + max{0,[max[col (2),col(5)]-col(1)+col(6)]}. The Reported Reserve is only calculated in aggregate, not by product type. The allocation of the total Reported Reserve 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 2D of VM-20).

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 Reserve**
Term	
Non-participating Whole Life	
Participating Whole Life	
Universal Life without secondary guarantee	
Universal Life with Secondary Guarantee	
Variable Universal Life	

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Variable Life	
Indexed Life	
Other	
TOTAL	

2. 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.

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.

   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 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. 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.

Comment [U1]: Moved from Section 3.E.7.

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.

Comment [U2]: Moved from Section 3.E.7.

n. If a scenario reduction technique is used, ~~describe~~description of the technique and ~~explain~~documentation of how the company determined that the technique meets the requirements of Section 2.H. of VM-20.

4. The following information regarding the mortality assumptions used by the company in determining principle-based reserves:

a. Description of each mortality ~~credibility~~ segment and the rationale for selecting the policies to include in each mortality ~~credibility~~ 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. ~~summary of the results of applying credibility criteria to determine which policies qualify for the simplified method to determine prudent estimate mortality assumptions~~.

c. A summary of the rationale and results of applying the underwriting scoring procedure to select the ~~valuation~~ 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. Description of each mortality segment and the rationale for selecting policies to include in each mortality segment~~

~~e. Ratios of experience mortality rates for each mortality segment to the 2001 CSO table. The ratios should be presented in 5-year age bands and reflect select and ultimate mortality.~~

d~~f~~. 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 ~~no broader than those allowed for direct company data~~ and including: age, gender, risk class, policy duration and other relevant information.

~~g. Source of data.~~

e~~h~~. If the company makes adjustments to ~~mortality~~ 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~~i~~. Description of the method to determine the ~~and support for~~ level of credibility for the period where sufficient company data exists, ~~procedure used~~ including:

(i) Support for the ~~A description and~~ rationale for the credibility method chosen. ~~procedure used.~~

(ii) 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.~~An explanation of the credibility analysis used to adjust experience mortality rates~~.

~~(iii) To the extent the company has changed the credibility procedure or procedures and values for determining partial credibility from the prior valuation date, the rationale for the change and an estimate of the impact of the change on the minimum reserve.~~

g~~j~~. If company experience is used, a s~~S~~ummary of company experience ~~credibility adjusted~~ mortality rates for each mortality segment.

h. If company experience is not used, a description of the industry basic table used for each mortality segment.

~~Impact of any change in mortality credibility procedure.~~

i~~l~~. Rationale and support for any adjustments to the mortality assumptions for historical mortality improvement up to the valuation date.

j. Rationale and support for any adjustments to mortality assumptions for impaired lives or policyholder behavior.

k~~m~~. 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. a 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.

~~i. For each mortality segment that does not qualify for the simplified method, a summary of the actual assumption margins used and the rationale used to determine assumption margins, and for each mortality segment that qualifies for the simplified method, a summary of the margins embedded in the commissioners' table.~~

l. Description and rationale of any adjustments made to increase margins above the prescribed margin.

m~~n~~. At least once every 3 years, the results of an actual to expected analysis.

5. The following information regarding each policyholder behavior assumption used by the company principle:

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.

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 rational regarding adjustments to lapse and mortality assumptions to account for potential anti-selection.

6. 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.

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. Description of the asset investment strategy, including asset reinvestment and disinvestment assumptions.~~

Comment [U3]: Moved to Section 3.E.3.

 c~~d~~. Method used to determine projected market value of assets (if needed for assumed asset sales). ~~.~~

 d~~e~~. 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. Summary of asset default cost assumptions including the:~~

  ~~(i) Method used to determine anticipated experience assumptions.~~

  ~~(ii) Method used to determine margins and the rationale for the particular margins used.~~

  ~~(iii) Rationale for the manner in which company historical experience was reflected and any changes in the method for developing historical experience, since the last PBR Actuarial Report.~~

  ~~(iv) Rationale for the choice of experience period.~~

  ~~(v) Rationale for any deviation in default cost assumptions from that indicated by market and industry experience.~~

 f~~g~~. A summary of the path of net asset earned rates for each model segment calculated for the deterministic reserve.

~~For fixed income investments included in starting assets, the embedded spread on starting assets for each model segment including:~~

~~(i) The approximate market value and the method used to determine such approximate market value of such investments on the valuation date.~~

~~(ii) The statutory value of such investments on the valuation date.~~

~~(iii) The gross level "option-adjusted" spread (in basis points) over the Treasury yield curve at the valuation date implied in the approximate market values of such investments on that date.~~

~~(iv) The projected average estimated annual default costs expressed as a percent of the approximate average annual market value of such investments.~~

~~(v) The net level "option-adjusted" spread over the Treasury yield curve at the valuation date.~~

~~(vi) The aggregate weighted average life and the method used to determine such aggregate weighted average life of such investments at the valuation date.~~

~~**Guidance Note:** This disclosure is intended to provide regulators a tool to assess from a capital market perspective the level of asset risk embedded in a company's principle-based valuation compared to that of other companies or compared to the current market risk associated with typical asset classes found in insurance company portfolios. It is anticipated that market spread benchmarks for various asset classes and quality rating levels will be developed or recommended to provide context to regulators when assessing an individual company's disclosures. It is important to recognize that asset spreads reflect all sources of risk, not just defaults. Further, the existence of these disclosure metrics does not indicate an intent that long-term estimates of default costs should fluctuate significantly from period to period based on movements in market values.~~

g~~i~~. Investment expense assumptions.

h~~j~~. Prepayment, call and put functions.

~~k. Number of scenarios used for the stochastic reserves and the rationale for that number.~~

Comment [U4]: Moved to Section 3.E.3.

i~~l~~. 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~~m~~. 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.

8. 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 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.

9. The following information regarding the reinsurance assumptions used by the company in determining principle-based reserves:

a. Description 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. ~~Section 8.A.4 of VM-20~~

b. Description of reinsurance assumptions 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.
~~Disclosure of the present value of total aggregate reinsurance cash flows determined pursuant to Section 4.A.4 of VM-20.~~

d. If a policy is covered by more than one reinsurance agreement, description of method to allocate reinsurance cash flows from each agreement.

e. If 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. ~~Description of the assumptions and the impact on the reinsurance cash flows for each item in Section 8.D of VM-20 for each reinsurance agreement.~~

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.

(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.

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"?

11. The following information regarding the deterministic and stochastic ~~reserve~~ exclusion tests:

a. Identification and description of each group of policies used in the deterministic and stochastic ~~reserve~~ 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 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 polices subject to the stochastic modeling exclusion would not be greater than the modified 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:

(a) Demonstrate that the greater of the deterministic reserve and the net premium reserve, less any associated deferred premium asset ~~,modified deterministic reserve~~ 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 deferred premium asset and (2) the deterministic reserve,~~modified 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 deferred premium asset and (2) the deterministic reserve ~~modified 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 deferred premium asset and (2) the deterministic reserve,~~modified 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 ~~reserve~~ exclusion test and for which the company chooses not to calculate stochastic reserves, the results of the deterministic ~~reserve~~ exclusion test for each group of policies.

12. 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 ~~sum of the seriatim~~ reserve~~s~~ for all policies, but with the ~~seriatim~~ reserve~~s~~ calculated based on the anticipated experience assumption for the risk factor and prudent estimate assumptions for all other risk factors.

(ii) The deterministic ~~sum the seriatim~~ reserve~~s~~ 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 ~~sum of the seriatim~~ reserve~~s~~ for all policies, but with the ~~seriatim~~ reserve~~s~~ calculated based on anticipated experience assumptions for all risk factors prior to the addition of any margins.

(ii) The deterministic ~~sum of the seriatim~~ reserve~~s~~ for all policies as reported.

c. For purposes of the disclosures required in 12a and 12b above

(i) ~~(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.

.~~mortality segments qualify for the simplified method to determine prudent estimate mortality assumptions, the anticipated experience assumption for mortality is the applicable valuation basic table.~~

(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.~~

~~(iii) To the extent that the company expects mortality improvement after the valuation date and VM-20 does not allow consideration of mortality improvement after the valuation date, any such mortality improvement is an implicit margin that must be included in the total margin.~~

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.

~~**Guidance Note:** Since the company is not required to determine an anticipated experience assumption or a prudent estimate assumption for assumptions that are prescribed for the deterministic reserve (i.e., interest rates movements, equity performance, and net spreads on reinvestment assets), when determining the impact of margins, the prescribed assumption shall be deemed to be the prudent estimate assumption, and the anticipated experience assumption.~~

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 listed in the table in Section 3.C.3 and disclose the sum of the stochastic reserves for each product on a standalone basis 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 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.

i. Competitor rate definition and usage.

j. Description of method to translate stochastic economic paths into fund performance.

k. Description of interest crediting strategy.

13. 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.

14. A certification from senior management certifying that the principle-based valuation complies with VM-G (Corporate Governance Guidance for Principle-Based Reserves).

F. PBR Actuarial Report Requirements for Variable Annuity Contracts

