

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

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The NAIC solicits comments on this draft. Comments should be sent to John Engelhardt, NAIC, at jengelha@naic.org by Nov. 3, 2008.

**VM-31 PBR REPORT REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLE-BASED RESERVE
VALUATION**

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A. Purpose

1. This section of the Valuation Manual provides the PBR report requirements for policies and/or contracts subject to principle-based reserve valuation pursuant to section 11 of the Standard Valuation Law.
2. Due to the size and complexity of the PBR report information that must be submitted, a standardized template has been developed that all companies must use to assist regulators in their review and analysis of this information.
3. This section also provides direction to the Appointed Actuary regarding compliance with the minimum PBR report requirements that must be provided.

B. General Requirements

1. Each year, the Appointed Actuary shall prepare a PBR Actuarial Report for all contracts subject to a principle-based reserve valuation. The PBR Actuarial Report shall include:
 - a. All the required documentation and reporting items as described in the various reserve requirements sections of the valuation manual, and
 - b. Descriptions of material decisions made and material information used by the Appointed Actuary in developing principle-based reserves (as described herein), and
 - c. A summary of the results of the principle-based reserve valuation (as described herein).
2. The Appointed Actuary shall provide the PBR Actuarial Report to the Company.

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Drafting Note: Record retention requirements need to be incorporated in this Subsection if not included in the Standard Valuation Law.

C. Standardized Template for the PBR Actuarial Report

C.1. The overview section of the PBR Actuarial Report shall contain:

1. An opening paragraph identifying the Appointed Actuary, the qualifications of the Appointed Actuary, and the relationship of the Appointed Actuary to the company.
2. A description of the policies and/or contracts subject to a principle-based reserve valuation.
3. A table, as shown below, that lists the major products issued since the Valuation Manual operative date, whether or not the products are being valued using a principle-based reserve valuation, and if so, the year a principle-based reserve valuation was first used for the products.

Product Name	Issue Years	Using PBR? (Yes or No)	If Using PBR, Year First Used
Life Insurance			
Annuities			
Accident and Health Insurance			
Deposit Type Contracts			

4. A description of the risks determined to be material by the Appointed Actuary associated with policies and/or contracts subject to a principle-based reserve valuation.
5. A table, as shown below, that summarizes the reserves and related actuarial items that have been calculated under a principle-based reserve valuation.

Principle-based Reserves				
Annual Statement Location	Direct Reserve (1)	Assumed Reserve (2)	Ceded Reserve (3)	Net Reserve (1)+(2)- (3)
Life Insurance and Annuity				
Life Insurance				
Annuities				

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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				

6. The extent to which the Appointed Actuary relied on others in determining the principle based reserve valuation.
7. A brief summary of the valuation assumptions and margins for each major product line subject to a principle-based reserve valuation including a:
 - 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 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 are inconsistent and the rationale for the inconsistency.

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- g. Description of any considerations necessary to understand the development of assumptions even if such considerations are not explicitly mentioned in the Valuation Manual.

This section provides an executive summary version of the assumptions and margins, additional details are included in later sections of the PBR Actuarial Report.

- 8. A description or listing of the modeling system(s) used for each of the major product lines subject to a principle-based reserve valuation.
- 9. A summary of any reinsurance treaties on the policies subject to these requirements and the approach used to model reinsurance cash flows (VM-20 D.5.3).
- 10. A summary of the approach used to model assets for each major product line subject to a principle-based reserve valuation including
 - a. The amount of starting assets supporting the policies subject to a principle-based reserve 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 and rationale for allocating the total asset portfolio into multiple segments (if applicable).
 - d. Description of the asset investment strategy, including asset reinvestment and disinvestment assumptions.
 - e. Description of the asset portfolio, including the types of assets, duration and their associated quality ratings.
 - f. Method used to determine market values.
 - g. Exposure to foreign currency fluctuations.
- 11. 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-20 E.5.7.4).
- 12. A description of the methods used to generate stochastic interest rates, equity performance, and separate account fund performance, and how any applicable calibration criteria are met (VM-20 C.7.2).
- 13. A description of the rationale for determining materiality, when applicable. The rationale could include such items as a percentage of surplus, a percentage of reserve, or a specific monetary value.
- 14. If a principle-based reserve calculation is performed as of a date other than the valuation date, a disclosure of any adjustment made in order to produce a reserve as of the valuation date and the methodology used to determine the adjustment (VM-20 C.3.7.b.vi).
- 15. A closing paragraph with the signature, title, telephone number and e-mail address of the Appointed Actuary, the Company name and address, and the date signed.

C.2 PBR Report Requirements – Life Products

C.2.1. Summary of Results

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1. Deterministic Reserve
 - a. Total deterministic reserve
 - b. Split of total deterministic reserve by major product types and by model segment.
 - c. Sum of the seriatim reserve for all policies.

2. Stochastic Reserve
 - a. Total stochastic reserve
 - b. Split of the total stochastic reserve between:
 - i. Sum of scenario reserves
 - ii. Modified deterministic reserve (for policies excluded from the calculation of the scenario reserves)
 - iii. Provision for the impact of material risks not captured by the cash flow model.
 - c. Graphical depiction of the distribution of scenario reserves, ranked from lowest to highest.

3. Minimum Reserve
 - a. Excess of the stochastic reserve over the deterministic reserve.
 - b. Split of total minimum reserve between general account and separate account reserve.

4. Sensitivity Tests
 - a. Flexible Premium Payment Pattern Assumption (VM-20 E.3.5.2)
 - b. A description of, results of, and action taken with respect to other sensitivity tests performed on key risk elements. (VM-20 E.3.3.3, VM-20 E.3.4)

C.2.2 Cash Flow Model Structure

1. Description of modeling system(s) used (VM-20 C.6.12.1).
2. Rationale for the organization of the policies and assets into model segments. (VM-20 C.6.12.2).
3. Description of approach used to group assets and policies for the deterministic reserve calculation within each model segment (VM-20 C.6.12.3).
4. Description of approach used to group assets and policies for the stochastic reserve calculation within each model segment (VM-20 C.6.12.4).
5. Description of approach used to validate model calculations within each model segment for both the deterministic and stochastic models (VM-20 C.6.12.5).
6. 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 (VM-20 C.6.12.6).
7. Description of how policy loans are modeled (VM-20 C.6.12.7).
8. Approach and rationale used to group general account equity investments, including non-registered indexed products. (VM-20 C.6.12.8).
9. Approach and rationale used to group separate account funds and subaccounts. (VM-20 C.6.12.9).

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Drafting Note: Section C.6.12 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.3 Mortality Assumptions

1. Description of credibility segments (VM-20 E.2.9.1)
2. Results of applying credibility criteria (VM-20 E.2.9.2)
3. Rationale for and results of applying underwriting scoring procedure and a summary of 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. (VM-20 E.2.9.3)
4. Description of mortality segments (VM-20 E.2.9.4)
5. Summary of experience mortality rates (VM-20 E.2.9.5)
6. Source of data (VM-20 E.2.9.6)
7. Adjustments for changes in risk selection and underwriting practices (VM-20 E.2.9.7)
8. Description of and support for credibility procedure used (VM-20 E.2.9.8)
9. Summary of credibility adjusted mortality rates (VM-20 E.2.9.9)
10. Impact of the change in mortality credibility procedure (VM-20 E.2.9)
11. Adjustments for impaired lives or policyholder behavior (VM-20 E.2.9.10)
12. Rationale for and summary of assumption margins (VM-20 E.2.9.11)
13. Actual to expected analysis (VM-20 E.2.9.12)

C.2.4 Policyholder Behavior Assumptions

Drafting Note: Section E.3.5 of 20 does not list all the items listed below, and will need to be updated in the next exposure draft to be consistent with these items.

1. Premium Payment Pattern
 - a. Sources of data and an explanation of why the data are reasonable and appropriate for this purpose
 - b. Description of method used to develop anticipated experience assumptions
 - c. Actual to expected analysis discussion (VM-20 E.3.5.1)
 - d. 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
 - e. Changes related to treatment of non-guaranteed elements (VM-20 E.3.5.5)
 - f. Description of any scenario-dependent dynamic formula (VM-20 E.3.5.4)
 - g. Changes in anticipated experience assumptions and/or margins since last PBR actuarial report
2. Premium Persistency
 - a. Sources of data and an explanation of why the data are reasonable and appropriate for this purpose
 - b. Description of method used to develop anticipated experience assumptions.

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- c. Actual to expected analysis discussion (VM-20 E.3.5.1)
 - d. 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
 - e. Changes related to treatment of non-guaranteed elements (VM-20 E.3.5.5)
 - f. Description of any scenario-dependent dynamic formula (VM-20 E.3.5.4)
 - g. Changes in anticipated experience assumptions and/or margins since last PBR actuarial report
3. Withdrawals
- a. Sources of data and an explanation of why the data are reasonable and appropriate for this purpose
 - b. Description of method used to develop anticipated experience assumptions.
 - c. Actual to expected analysis discussion (VM-20 E.3.5.1)
 - d. 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
 - e. Changes related to treatment of non-guaranteed elements (VM-20 E.3.5.5)
 - f. Description of any scenario-dependent dynamic formula (VM-20 E.3.5.3)
 - g. Changes in anticipated experience assumptions and/or margins since last PBR actuarial report
4. Other policyholder behavior risk factors
- a. Sources of data and an explanation of why the data are reasonable and appropriate for this purpose
 - b. Description of method used to develop anticipated experience assumptions
 - c. Actual to expected analysis discussion (VM-20 E.3.5.1)
 - d. Margins used, methodology used to determine margins, and rationale for the particular margins used, including how the results of sensitivity tests were used to determine the margins
 - e. Changes related to treatment of non-guaranteed elements (VM-20 E.3.5.5)
 - f. Description of any scenario-dependent dynamic formula
 - g. Changes in anticipated experience assumptions and/or margins since last PBR actuarial report

C.2.5 Expense Assumptions

1. Methodology used to allocate expenses to the policies subject to a principle-based reserve valuation (VM20 E.4.3.1).
2. Methodology used to apply the allocated expenses within the cash flow model (VM-20 E.4.3.2)
3. Approach used to determine margins (VM-20 E.4.3.3).

Drafting Note: Section E.4.3 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.6 Asset Assumptions (VM-20 E.5.7)

1. Summary of asset default cost assumptions
 - a. Method used to determine anticipated experience assumptions
 - b. Rationale for the manner in which company historical experience was reflected,
 - c. The rationale for the choice of experience period
 - d. The methodology used to determine margins and the rationale for the particular margins used
2. Investment expense assumptions;
3. Prepayment, call and put functions.
4. Number of scenarios used for the stochastic reserves and the rationale for that number.

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Drafting Note: Section E.5.7 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.7 Revenue Sharing Assumptions

1. Description of revenue sharing agreements and the nature of any guarantees (VM-20 E.6.4.1).
2. Description of the rationale for the amount of net revenue sharing income, if any, included in the projections (VM-20 E.6.4.2).
3. Description of the approach to establish a margin for uncertainty (VM-20 E.6.4.2).

Drafting Note: It is anticipated that additional disclosure and documentation requirements will be incorporated in VM-20 once the revenue sharing requirements are finalized. Section E.6.4 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.8 Reinsurance Assumptions

1. Description of approach to model reinsurance cash flows (VM-20 D.6.1)
2. Disclosure of the present value of total aggregate reinsurance cash flows (VM-20 D.6.2).
3. If a policy is covered by more than one reinsurance agreement, description of method to allocate reinsurance cash flows from each agreement (VM D.6.3).
4. Description of each reinsurance provision where a stochastic analysis is required (VM-20 D.6.4).
5. Description of each reinsurance provision when treatment in the cash flow model is prescribed (VM-10 D.6.5).

Drafting Note: It is anticipated that additional disclosure and documentation requirements will be incorporated in VM-20 once the reinsurance requirements are finalized. Section D.6 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.9 Non-Guaranteed Elements

1. Description of approach used to model non-guaranteed elements (VM-20 C.9.6.a)
2. Description of the approach to establish a margin for conservatism (VM-20 C.9.6.b).

Note: It is anticipated that additional disclosure and documentation requirements will be incorporated in VM-20. Section C.9.6 is not in the current VM-20 exposure draft, but is anticipated to be incorporated in the next exposure draft of VM-20.

C.2.10 Additional Disclosure Items

1. Stochastic Modeling Exclusion (VM20 C.4)
 - a. For policies or contracts that are not stochastically modeled:
 - i. Description of the policies or contracts for which the stochastic modeling exclusion test was elected.
 - ii. Method used for election (i.e., either passing the stochastic modeling exclusion test, or demonstrating that the modified deterministic reserve complies with the applicable requirements in VM-20).(VM-20, C.4.3)
 - b. If the stochastic modeling exclusion test is used, results of the 16 scenarios and the test ratio.

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- c. If the demonstration method is used, the rationale for using the demonstration method and the demonstration that shows compliance with the applicable requirements in VM-20 C.4.3.
2. Impact of margins on deterministic reserve (VM-20 C.5.5)
3. Material risks not reflected in cash flow model (VM-20 C.3.7.a)
4. Impact of aggregation on the stochastic reserve (VM-20 C.3.7.b)
5. Approximations and simplifications used in reserve calculations (VM-20 C.1.7)
6. Path of net asset earned rates for deterministic reserve (VM-20 E.5.7.1)
7. Embedded spread on starting assets (VM-20 E.5.7.2)
8. Competitor rate definition and usage
10. Method to translate stochastic economic paths into fund performance (VM-20 E.5.6.4)
11. Interest crediting.

C.2.11 Certifications

1. Certification from a duly authorized investment officer that the modeled asset investment strategy is consistent with the company's current investment strategy. (VM-20 E.5.7.4.d)
2. Actuarial certification regarding the modeling of clearly defined hedging strategies (VM-20E.5.7.4.c)

C.2.12 Summary of Valuation Assumptions

1. Provide a listing of the final prudent estimate valuation assumptions for the major risk factors.

C.2.13. Summary of Assumption Margins

1. Provide a listing of the margins used for the major risk factors.

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