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**REPORTING AND DOCUMENTATION REQUIREMENTS FOR BUSINESS SUBJECT TO A PRINCIPLES-BASED RESERVE VALUATION**

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 Subsection 2 Definitions  
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**Subsection 1. Purpose**

This section provides reporting and documentation requirements for reserves calculated under a principles-based valuation performed under section [insert appropriate section] of the Standard Valuation Law. Reporting and documentation requirements regarding valuations for other supplemental benefits and riders not directly identified in Section 2 of the Valuation Manual are to be consistent with the requirements defined by this section.

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**Subsection 2. Definitions**

Definitions used in this section are as specified in section [insert applicable section] of the Valuation Manual.

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**Subsection 3. Reporting and Documentation Requirements – All Products**

This subsection describes the reporting and documentation requirements that are applicable to all products subject to a principle-based reserve valuation. Subsequent subsections contain additional reporting and documentation requirements that are unique to specific products.

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A. Each year, the Appointed Actuary shall prepare a PBR Actuarial Report for all contracts subject to a principles-based reserve valuation. The PBR Actuarial Report documents shall state all material decisions made, and information used by the Appointed Actuary.

**Drafting Note:** The Company may decide to have the Appointed Actuary prepare one PBR Actuarial Report for all products, or prepare several PBR Actuarial Reports for different products or different product lines. If the Company chooses to have multiple PBR Actuarial Reports, the Company shall ensure that all PBR Actuarial Reports are submitted together along with a summarizing report.

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1. The PBR Actuarial Report shall include:

- a. An opening paragraph identifying the Appointed Actuary, including the Appointed Actuary's name, title, Company name, Company address and telephone number and relationship with the insurer.
- b. A description of the policies and/or contracts subject to a principles-based reserve valuation, including a table, as shown below, that summarizes the reserves and related actuarial items that have been calculated under a principles-based reserve valuation.

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Principles-Based Reserves				
Annual Statement Location	Direct Reserve (1)	Assumed Reserve (2)	Ceded Reserve (3)	Net Reserve (1)+(2)-(3)
<u>Life Insurance and Annuity</u>				
Life Insurance				
Annuities				

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**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

Supplementary Contracts Involving Life Contingencies				
Accidental Death Benefit				
Disability – Active				
Disability – Disabled				
Miscellaneous				
Total Life Insurance and Annuity				
<b>Accident and Health Insurance</b>				
Active Life Reserve				
Claim Reserve				
Total Accident and Health Insurance				
<b>Deposit Type Contracts</b>				
<b>TOTAL PRINCIPLES-BASED RESERVES</b>				

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<#>A reliance paragraph describing those areas, if any, where the PBR Valuation Actuary is relying on other experts in developing data, procedures, or assumptions, supported by a reliance statement of each such expert. If the PBA Valuation Actuary has relied on other experts to develop certain portions of the work supporting principles-based approach reserves, the reliance paragraph should include a statement such as:¶  
¶  
"I have relied on [name], [title] for [e.g., Stochastic Reserve calculations for the \_\_\_\_ product line] as certified in the attached statement. I have reviewed the information relied upon for reasonableness."¶  
¶  
A statement of reliance on other experts should be accompanied by a statement by each of the experts in the form prescribed by section [insert applicable section].¶  
¶  
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- c. The amount of Starting Assets supporting the policies subject to these requirements, a description of the assets used; and the method and rationale for determining the amount of Starting Assets, selecting the assets used, and apportioning the assets between the policies subject to principles-based reserve valuation requirements and those policies not subject to principles-based reserve valuation requirements;
- d. A summary of the valuation assumptions used and a description of the method used to determine valuation assumptions and margins, as described in Subsection 3(B), 3(C), 3(D), 3(E), and 3(F);
- e. Any significant changes in the method used to determine assumption margins from the prior year's calculation, and the rationale for the change;
- f. A disclosure of valuation assumptions that are inconsistent with risk analysis and management techniques used by the Company, and the rationale for the inconsistency;
- g. A description of the Cash Flow Model used, the rationale for the model structure, and the approach used to validate the model calculations;
- h. A summary of any reinsurance treaties on the policies subject to these requirements and the approach used to model reinsurance cash flows;
- i. A description of the methods used to generate stochastic interest rates, equity performance, and separate account fund performance, and the results of calibration if applicable;
- j. A description of the approach used to model risk management strategies (e.g., hedging), and other derivative programs;
- k. A description (and results) of sensitivity tests performed on the key risk elements and the levels at which the company would expect or need management action and/or regulatory notification;
- l. A list of key risk and experience reporting elements that the company will be tracking to monitor changes in experience that will be used to update assumptions, the frequency of the tracking, and documentation of past management actions taken because of that tracking;
- m. The length of the projection period and the rationale for choosing the length of the projection period;

**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

- n. If the principles-based reserve calculations are 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;
- o. A description of any considerations necessary to understand the development of assumptions even if such considerations are not explicitly mentioned in the Valuation Manual; and
- p. The disclosures described in Subsections 4 and 5.

2. The Appointed Actuary shall provide the PBR Actuarial Report to the Company, the PBR Review Actuary and, upon request, to the Commissioner.

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

B. Documentation Requirements for Mortality Assumptions

The PBR Actuarial Report shall disclose the rationale and support for the mortality assumptions and shall include at least the following items:

1. Experience Mortality:

- a. Summarize any mortality studies used to support mortality assumptions, quantify the exposures and corresponding deaths, describe the important characteristics of the exposures and comment on unusual data points or trends;
- b. Document the age of the experience data used to determine expected mortality curves and comment on the relevance of the data;
- c. Describe how the expected mortality curves compare to recent historical experience and comment on any differences;
- d. Disclose the actual to expected analysis;
- e. Explain how the curve reflects the wearing off of underwriting over time (if applicable);
- f. Discuss any assumptions made with respect to mortality improvements, the support for such assumptions and how such assumptions adjusted the modeled mortality;
- g. Identify, quantify and explain any changes in mortality assumptions from the prior year;
- h. Disclose the rationale for any change in methodology (or parameters used in the methodology) for aggregating experience and the impact on reserve levels of such change; and
- i. Disclose any other relevant important information concerning the mortality assumption.

2. Assumption Margins:

- a. Describe the method used to determine and the rationale for determining appropriate assumption Margins;
- b. Summarize the assumption Margins used; and
- c. Disclose the results of sensitivity tests.

C. Documentation Requirements for Policyholder Behavior Assumptions

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**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

The PBR Actuarial Report shall disclose the rationale and support for the policyholder behavior assumptions and shall include at least the following items:

1. Describe the policyholder behavior assumptions used, including premium persistency, lapse and withdrawal, and any changes in these assumptions since the last valuation;
2. Describe the process used to establish, and rationale for, the assumptions for policyholder behavior, and any change in process since the last valuation;
3. If the company determines that a previously defined set of policyholder behavior assumptions is still appropriate, provide a description of the experience and analysis that led to that conclusion;
4. Describe the methodology and rationale for assigning premium assumptions to policies in the reserve calculation, and any changes in the methodology since the last valuation;
5. Describe the sources of data used to develop Prudent Estimate assumptions including recent historical company experience and relevant industry data, if any. This description shall include support for determination of the reasonableness and appropriateness of the data that were used;

6. Describe the methodology and rationale for determining Margins; and

7. Disclose the actual to expected analysis.

**D. Documentation Requirements for Expense Assumptions**

The PBR Actuarial Report shall disclose the rationale and support for the expense assumptions and shall include at least the following items:

1. Describe the methodology used to allocate expenses to the policies subject to a principles-based reserve valuation;
2. Describe the methodology used to apply the allocated expenses within the Cash Flow Model; and
3. Describe the approach used to determine appropriate assumption Margins.

**E. Documentation Requirements for Asset Assumptions**

The PBR Actuarial Report shall disclose the rationale and support for the asset assumptions and shall include at least the following items:

1. Describe the asset investment strategy used to project future asset purchases in the model, and certification from an investment officer that it is consistent with the company's current investment strategy;
2. Provide a summary of reinvestment and disinvestment assumptions;
3. Provide a summary of asset default cost assumptions, including the following items:
  - a. A description of the development of Anticipated Experience Assumptions and the rationale for the manner in which company historical experience was reflected;
  - b. The rationale for the choice of experience period for all supporting company, industry, and broad market data sources used. Include the rationale for any change in method of determining such periods; and
  - c. The rationale for the Margins chosen for the various asset classes, including any situations where lower quality assets do not have higher Margins (when expressed as a percentage of the credit exposure on the corresponding assets) than higher quality assets of similar maturities.

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**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

4. Disclose the investment expense assumptions;
5. Disclose the bond call function;
6. Disclose the mortgage prepayment function;
7. Describe the method for determining market value for assets sold due to divestment strategy;
8. Describe the approach used to group general account equity investments for modeling;
9. Describe the approach used to group separate account funds and subaccounts for modeling; and
10. Describe the exposure to foreign currency fluctuations.

F. Documentation Requirements for Non-Guaranteed Elements, Reinsurance Agreements and Revenue Sharing Assumptions.

1. Describe the revenue sharing agreement and the rationale for any source of net revenue sharing income used in the projections.
2. Document that the modeling of revenue sharing agreements complies with principles-based reserve valuation requirements, and document the rationale for any source of net revenue sharing income used in the projections.

**Drafting Note:** It is anticipated that additional disclosure and documentation requirements will be incorporated in this Subsection for these items.

**Subsection 4. Additional Reporting and Documentation Requirements – Life Products**

This subsection describes the additional reporting and documentation requirements that are applicable only to life products subject to a principles-based reserve valuation.

A. The PBR Actuarial Report shall include:

1. A comparison of the Deterministic Reserve to the Stochastic Reserve, including the distribution of the Scenario Reserves;
2. A summary and description of the Model Segments used in the Cash Flow Model;
3. An estimate of the impact of each Margin on the Deterministic Reserve that has a material impact on Reported Reserve for each Model Segment, as required by subsection 4.E.7(a)(i) of section VM-20 of the Valuation Manual.
4. An estimate of the impact of the aggregate impact of all Margins on the Deterministic Reserve for each Model Segment, as required by subsection 4.E.7(a)(ii) of section VM-20 of the Valuation Manual.
5. A summary of the rationale to support the Stochastic Modeling Exclusion (if applicable) as required by Subsection 4.D.6(b) and subsection 4.D.6(c) of section VM-20 of the Valuation Manual.
6. A description of any material risks that are not fully reflected in the Cash Flow Model used to calculate the Stochastic Reserve, and a description of how provision was made for such risks in the Stochastic Reserve, as required by subsection 4.D.7(a) of section VM-20 of the Valuation Manual.
7. A description of the estimated impact of aggregation on the Stochastic Reserve, as required by subsection 4.D.7(b) of section VM-20 of the Valuation Manual.

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**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

8. A summary of the approach used to stochastically model the related risk factor(s) for each feature of a reinsurance agreement where stochastic modeling is required, as described in subsection 5.F.(1) of section VM-20 of the Valuation Manual.
9. A description of each reinsurance provision that is subject to prescribed treatment in the cash flow model as required by subsection 5.F.(2) of section VM-20 of the Valuation Manual.

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d. The company can use reasonable approximations when performing this demonstration, but must fully disclose the nature of the approximations used and the rationale for why the approximat[... [85]

**B. Additional Documentation Requirements for Mortality Assumptions**

1. If experience mortality rates for a 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 information to support the use of such data as required by subsection 6.I.(1) of section VM-20 of the Valuation Manual.
2. Provide a summary of the rationale to support the use of Additional Adjustments to Mortality Curves as required by subsection 6.I.(2) of section VM-20 of the Valuation Manual.
3. Provide a summary supporting the use of the Credibility Method used as required by subsection 6.I.(3) of section VM-20 of the Valuation Manual.
4. Provide a summary of the rationale and results of the analysis used in the selection of the Industry mortality table(s) used for credibility weighting (if applicable) as required by subsection 6.I.(4) of section VM-20 of the Valuation Manual.
5. Provide a summary supporting the use of additional adjustments to the Credibility Adjusted Mortality Table Rates as required by subsection 6.I.(5) of section VM-20 of the Valuation Manual.
6. Provide a summary of the rationale and results of the analysis used in the selection of the Commissioner's Standard Mortality Table, Valuation Mortality Table as required by subsection 6.I.(6) of section VM-20 of the Valuation Manual.

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**C. Additional Documentation Requirements for Policyholder Behavior Assumptions, as required by subsection 7.F of section VM-20 of the Valuation Manual**

1. Summarize the results of required sensitivity tests that underlie the premium payment assumptions, as required by section VM-20 of the Valuation Manual, which include:
  - a. Minimum premium scenario;
  - b. No further premium payment scenario;
  - c. Pre-payment of premiums – Single premium scenario; and
  - d. Pre-payment of premiums – Level premium scenario.
2. Describe the Scenario-dependent mechanism, if any, for varying withdrawal assumptions.
3. Describe the Scenario-dependent mechanism, if any, for varying premium assumptions.
4. Describe the changes in premium payment assumptions and withdrawal assumptions related to the treatment of non-guaranteed elements in the reserve calculations.
5. Explain how assumptions were determined for periods based on less than fully credible relevant experience.

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**D. Additional Documentation Requirements for Asset Assumptions**

**Reporting and Documentation Requirements for Business Subject to a Principles-Based Reserve Valuation VM-31**

1. For each Model Segment, disclose the path of Net Asset Earned Rates calculated for the Deterministic Reserve.
2. For fixed income investments included in the Starting Assets, disclose the embedded spread on Starting Assets for each Model Segment as required by subsection 9.G.(2) of section VM-20 of the Valuation Manual.
3. Disclose the results of the consistency test between the discount rates and the investment process being modeled and provide an explanation for any purported inconsistencies identified by the test as required by subsection 9.C.(3) of section VM-20 of the Valuation Manual.
4. Disclose the required Derivative Program Documentation and Certification as described in subsection 9.C.(4) of section VM-20 of the Valuation Manual.

**Subsection 5. Additional Reporting and Documentation Requirements – Annuity Products**

This subsection describes the additional reporting and documentation requirements that are applicable only to annuity product types reserves determined under a principles-based reserve valuation.

**Drafting Note:** It is expected that the Annuity Reserve Working Group will contribute reporting requirements unique to annuity products for inclusion in this subsection.

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- a. The approximate market value and the method used to determine such approximate market value
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- b. The statutory value of such investments on the Valuation Date, ¶
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- c. 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. Further guidance on acceptable methods to compute this spread shall be published by the NAIC, ¶
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- d. The projected average estimated annual default costs (including ... [107])
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# ATTACHMENT 3

## Section 4(II) PBR Reporting

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**Reporting and Documentation Requirements for Principles-Based Reserves  
from the American Academy of Actuaries' Subgroup 1 of the Valuation Law and Manual Team**

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

**San Francisco, CA – June 2007**

The American Academy of Actuaries is a national organization formed in 1965 to bring together, in a single entity, actuaries of all specializations within the United States. A major purpose of the Academy is to act as a public information organization for the profession. Academy committees, task forces and work groups regularly prepare testimony and provide information to Congress and senior federal policy-makers, comment on proposed federal and state regulations, and work closely with the National Association of Insurance Commissioners and state officials on issues related to insurance, pensions and other forms of risk financing. The Academy establishes qualification standards for the actuarial profession in the United States and supports two independent boards. The Actuarial Standards Board promulgates standards of practice for the profession, and the Actuarial Board for Counseling and Discipline helps to ensure high standards of professional conduct are met. The Academy also supports the Joint Committee for the Code of Professional Conduct, which develops standards of conduct for the U.S. actuarial profession.

Subgroup 1 of the Valuation Law and Manual Team

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Corinne Jacobson, F.S.A., M.A.A.A.

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Albert Sekac, F.S.A., M.A.A.A.

Mike Villa, F.S.A., M.A.A.A.

David Whittemore, F.S.A., M.A.A.A.

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approach (PBA) under

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Documentation

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**Drafting Note:** The majority of the material in this section was originally contained within the section of the Valuation Manual that defines the PBA reserve calculation requirements for life products. It has been carved out and put in its own section of the Valuation Manual to clarify/distinguish requirements for calculating reserves from documentation requirements that are not a direct component of the reserve calculation. However, further work is needed to link these documentation requirements to the appropriate reserve calculation requirement that gave rise to these documentation requirements.

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, other than those specified below,

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“PBR Valuation Actuary” is defined as the qualified actuary responsible for the content of the PBR Actuarial Report documenting methods and assumptions supporting a principles-based approach reserves.

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**and Disclosure**

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product types valued using

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Page 1: [8] Deleted , to support the PBR Certification. The company	Author
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Page 1: [9] Deleted Valuation Actuaries	Author
Page 1: [9] Deleted company	Author
Page 1: [9] Deleted Valuation Actuaries, each shall sign a PBR Certification and prepare a PBR	Author
Page 1: [9] Deleted Report for their respective product area, and the company	Author
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<b>Drafting Note:</b> The certification section may be moved to a different section of the Valuation Manual that includes the AOMR requirements that address both AOMR opinions and PBR certifications.	
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**Drafting Note:** the recommended language may be modified as needed to meet the circumstances of a particular company.

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## PBR Valuation

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and his or her qualifications. This opening paragraph should generally indicate the PBR Valuation

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to the company and his or her qualifications to sign the PBR Certification. The opening paragraph of the PBR Certification should include a statement such as:

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“I [name], am [position] of [insurance company name] am a member of the American Academy of Actuaries. I believe I meet the qualification standards of the American Academy of Actuaries to render this Certification regarding the principles-based approach reserves, and am familiar with the valuation requirements applicable to such reserves.”

For a consulting actuary, the opening paragraph of the PBR Certification should include a statement such as:

“I [name], am a member of the American Academy of Actuaries, am associated with the firm of [name of consulting firm]. I have been engaged by the [name of company] to render this PBR Certification. I believe I meet the qualification standards of the American Academy of Actuaries to render this Certification regarding the principles-based approach reserves, and am familiar with the valuation requirements applicable to such reserves.”

**Drafting note:** we could specify that if the PBR Valuation Actuary is not the appointed actuary, then the PBR Valuation Actuary is appointed or engaged by the appointed actuary.

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requirements. This description should include a statement such as:

**“I have examined the actuarial methods and actuarial assumptions used in determining the principles-based approach reserves listed below**

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in the annual statement of the company, as prepared for filing with state regulatory officials as of December 31, 20[ ]. Summarized below are those

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approach reserving methods and assumptions.”

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Exhibit 5

A.

A reliance paragraph describing those areas, if any, where the PBR Valuation Actuary is relying on other experts in developing data, procedures, or assumptions, supported by a reliance statement of each such expert. If the PBA Valuation Actuary has relied on other experts to develop certain portions of the work supporting principles-based approach reserves, the reliance paragraph should include a statement such as:

“I have relied on [name], [title] for [e.g., Stochastic Reserve calculations for the \_\_\_\_ product line] as certified in the attached statement. I have reviewed the information relied upon for reasonableness.”

A statement of reliance on other experts should be accompanied by a statement by each of the experts in the form prescribed by section [insert applicable section].

A paragraph expressing the PBR Valuation Actuary’s certification that the methods and prudent estimate assumptions supporting principles based-approach reserves are reasonable and appropriate and that resulting reserve amounts are calculated in a manner this is consistent with the principle-based approach requirements. The PBR Certification should include a statement such as:

“I certify that the reserves and related actuarial values concerning the principles-based approach reserves identified above:

Are computed in accordance with presently accepted actuarial standards as promulgated by the Actuarial Standards Board;

When actuarial judgment is involved, are based on actuarial assumptions which are reasonable and appropriate;

Meet the requirements of a PBA valuation specified in [insert applicable section] of the Valuation Manual.”

---

Signature of PBA Valuation Actuary

2. The PBR Actuarial Report shall include:

A description of the policies subject to the principles-based valuation requirements;

**Drafting Note:** The timing of when the report is provided will be determined by the NAIC.

4. The PBR Actuarial Report and any other material provided by the PBR Valuation Actuary to the PBA Review Actuary or the commissioner in connection therewith shall be kept confidential by the PBA Review Actuary and the commissioner and shall not be made public. The PBR Actuarial Report or other material may otherwise be released by the commissioner (a) with the written consent of the company, or (b) to the Actuarial Board for Counseling and Discipline upon request stating that the report of other material is required for the purpose of professional disciplinary proceeding and setting forth procedures satisfactory to the commissioner for preserving the confidentiality of the PBR Actuarial Report or other material.

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at least once every three years;

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study was done on a block of business that was similar to the block of business being valued, identify the differences between the block of business on which the data was gathered and the block of business being valued. Describe how these differences were reflected in the mortality used in modeling.

i. If experience mortality rates

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a business segment are being determined using data consistent with the business segment, but is not based on the actual experience directly applicable to the business segment (whether or not the business segment is from the company), the company shall document

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similarities or differences between the two business segments (e.g., type of underwriting, marketing channel, average policy size, etc.). Additionally, the company shall document the following:

i. Source of data including a detailed explanation of the appropriateness of the data, the underlying source of data, including how the mortality rates were developed, graduated and smoothed.

ii. 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.

j. Actual experience data may be determined by individual risk class or aggregated for multiple risk classes. Once a method is chosen the company may

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, but must disclose the rationale

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3. Additional Adjustments to Mortality Curves:

a. Explain the rationale for any adjustment;

b. Document, describe and summarize any studies used to support the adjustment;

c. Document the mathematics used to adjust the mortality;

d. Provide any other relevant important information concerning any adjustments to the experience mortality for changes in the mortality assumption.

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following items with respect to

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A description of the framework

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. This description should indicate how the company concluded that the framework provides an appropriate level of granularity.

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6 Description of approach used to determine appropriate assumption Margins,

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at least once every three years.

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The company shall document

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product types valued using

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approach reserves.

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A summary of the impact of Assumption Margins:

a. Impact of each Margin.

**The company shall determine and disclose in the PBR Actuarial Report an**

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**the following risk factors: mortality, policyholder behavior, expense and asset return assumptions. This shall be determined for**

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- i. The sum of the Seriatim Reserves for all policies, but with the Seriatim Reserves calculated based on the Anticipated Experience Assumption for the risk factor and Prudent Estimate Assumptions for all other risk factors.
  - ii. The sum the Seriatim Reserves as reported.
- b. Impact of Aggregate Margin.

**The company shall determine and disclose in the Actuarial Report an**

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. This shall be determined for each Asset Segment

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- i. The sum of the Seriatim Reserves for all policies, but with the Seriatim Reserves calculated based on Anticipated Experience Assumptions for all risk factors prior to the addition of any Margins.
- ii. The sum of the Seriatim Reserves for all policies as reported.
- c. Since the company does not determine an Anticipated Experience Assumption or a Prudent Estimate Assumption for assumptions that are prescribed (e.g., interest rates movements, equity performance, and net spreads on reinvestment assets), the prescribed assumption shall be deemed to be the Prudent Estimate Assumption, and the equivalent of an Anticipated Experience Assumption for these risk factors will be prescribed for the purpose of determining the impact of assumption Margins, and found in [insert applicable section] of the Valuation Manual.

4. Demonstration

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- a. A complete demonstration supporting the exclusion must be provided in the PBR Actuarial Report in the initial exclusion year and at least once every three (3) calendar years subsequent to the initial exclusion;
- b. Documentation

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to whether changing conditions over the current and two (2) subsequent calendar years would be likely to change the conclusion to exclude the group of policies from the stochastic modeling requirement

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. Such disclosure should include at least the following:

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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.);

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 underlying the approach;

If there is more than one model element included in this provision, the documentation shall clarify whether a separate provision was determined for each element, or collectively for groups of two or more elements. The documentation shall explain the methodology, supporting rationale and key assumptions for how separate provisions were combined.

6. The company shall disclose

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, that is, the degree of risk offsets reflected in the Reported Reserve due to aggregating groups of policies when performing the Stochastic Reserve calculation.

a. The impact of aggregation

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shall be determined by:

- i. Subdividing the total block of policies subject to these requirements into subgroups that reflect similar risk characteristics that will likely create risk offsets when aggregated together;
  - ii. Determining the Reported Reserve for each subgroup of policies; and
  - iii. Summing the Reported Reserves for each subgroup of policies, and subtracting the actual Reported Reserve for all policies.
- b. Examples of risk characteristic that the company may consider when selecting the number of subgroups include:
- i. Separate account vs. general account policies;
  - ii. Flexible premium vs. fixed premium policies;
  - iii. Policies with cash values vs. policies with little or no cash values.
- c. The company shall disclose in the PBR Actuarial Report the impact of aggregation 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

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buying or selling a block of business, or entering into (or canceling) a reinsurance arrangement covering the policies subject to these requirements

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- d. The company can use reasonable approximations when performing this demonstration, but must fully disclose the nature of the approximations used and the rationale for why the approximations are appropriate.
- e. The company can use a date that precedes the valuation date to perform this demonstration, but shall certify that the use of such date will not produce a material change in the results if the results were based on the valuation date.

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Credibility Analysis:

- a. Identify the credibility methodology used;
- b. Discuss the appropriateness of the credibility procedure used;

c. Describe how partial credibility was applied to subcategories;

**d. Discuss the result of the credibility analysis used to adjust**

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curves;

**e. The company may separate the credibility adjusted**

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**rates by risk class by developing separate**

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rates for each risk class. In doing so, the company must disclose the underwriting differentials used by class and must conserve the total number of deaths in the aggregate.

**e. To the extent the company has changed the credibility methodology (**

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**procedures and values for determining partial credibility)**

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**prior valuation date, the company must disclose the rationale for the change and quantify the impact on the Reported Reserve of the change**

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If the company reflects the effects of risk selection and underwriting practices not reflected in the underlying experience, but supported by relevant published medical and clinical studies, the company may only reflect the effectiveness of such risk selection and the anticipated incremental benefits over prior risk selection techniques. The company shall disclose the rationale and support for the adjustment.

**The company may not use a study unless the company has reviewed the underlying techniques used to develop the study and concluded that the study is appropriate for use. The company shall disclose the rationale used to reach this conclusion**

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**a.**

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mortality table(s);

**b. Provide a comparison of the mortality rates of the Prudent Estimate mortality assumption with the selected**

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The PBR Actuarial Report shall disclose/document the following items with respect to policyholder behavior assumptions:

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A description and rationale of the assumptions used, and

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Prudent Estimate

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. Sensitivity tests must

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, but are not limited to, the following premium payment assumptions

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. At any point in the Policy's lifetime, the policy provisions define a future stream of future minimum premium payments that will keep the Policy in force until Policy expiry. This pattern of premium payments may depend on the policy design, and could be level or annually increasing or a combination of the two. When the minimum premium is greater than zero, it is reasonable to assume that some policyholders fail to pay the minimum premium, especially when the minimum premium for the current year is greater than the premium actually paid in the prior year. If the minimum premium is increasing substantially compared to the prior year premium, it is reasonable to assume a "shock lapse," for example, where the minimum premium has been zero for a period of years and the next minimum premium is substantial. These non-payment lapse assumptions should be consistent with lapse experience on policies where no nonforfeiture option is available. The company shall estimate the impact on the Reported Reserve of assuming that all policyholders pay the minimum premium required by the policy terms to keep the Policy in force each year.

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- . The company shall estimate the impact on the Reported Reserve of assuming that no policyholders will pay premiums after the projection start date. In this scenario it is reasonable to assume that some policyholders will withdraw their funds at the projection start date while other policies will lapse or terminate without value according to the terms of their contracts.

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- . The company shall estimate the impact on the Reported Reserve of assuming that all policyholders will pay all future premiums on the projection start date, to the extent that such pre-payments are permitted under the terms of the policies or by the company's current practices. In this scenario no non-payment lapses would be assumed. However, if the value of the cash surrender value is roughly equivalent to the value of the future death benefits (assuming no further premiums), then it would be reasonable to assume some policyholders will elect to surrender their policies. If the cash surrender value is substantially less than the value of the death benefits, as may be the case with policies with secondary guarantees, it would be reasonable to assume that few or none would surrender their policies.

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Some flexible premium policies may permit the policyholder to pay a level premium that is guaranteed to keep the Policy in force until the policyholder's death. This premium could be stipulated in the contract or derived from the terms of the contract. The company shall estimate the impact on the Reported Reserve of assuming that all policyholders pay level premiums from the projection start date forward in an amount sufficient to keep the contract in force from the projection start date until the insured's death (or as long as possible under the terms of the contract). In this scenario no non-payment lapses would be assumed. However, surrenders and withdrawals might occur as described in scenario (c).

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5. An explanation of

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set beyond the point where

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Date;

- b. The statutory value of such investments on the Valuation Date;
- c. 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. Further guidance on acceptable methods to compute this spread shall be published by the NAIC;
- d. The projected average estimated annual default costs (including how they were derived) expressed as a percent of the approximate average annual market value of such investments. Further guidance on acceptable methods to compute this spread shall be published by the NAIC;

- e. The net level “option-adjusted” spread over the Treasury yield curve at the Valuation Date (Subparagraph (c) minus Subparagraph (d); and
- f. The aggregate weighted average life and the method used to determine such aggregate weighted average life of such investments at the Valuation Date.

**Drafting Note:** This disclosure is intended to provide regulators and the PBA Review Actuary a tool to assess from a capital market perspective the level of asset risk embedded in a company’s principles-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 and the PBA Review Actuary 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

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, the company shall perform the following calculation:  
a. For a selected Scenario

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- Asset Segment, set the starting asset amount exactly equal to the Scenario Reserve for that Asset Segment (which is likely to be different than the starting asset amount used to determine the Scenario Reserve);
- b. Project the accumulated assets to the end of the projection year that gave rise to the greatest present value of accumulated deficiencies using the same model and assumptions used to calculate the Scenario Reserve;
- c. Discount the value in Paragraph (3)(b) to the valuation date using the path of discount rates used to calculate the Scenario Reserve; and
- d. Provide

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if the amount in Paragraph (3)(c) is materially different than zero.

**Drafting Note:** The NAIC will determine the frequency of the

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- a. The company shall provide documentation for the company's Derivative Programs that affect Asset Segments subject to these requirements, starting with a list that identifies and summarizes the purpose of each Derivative Program, that clarifies whether it involves the future purchase or sale of Derivative Instruments, and if so whether it is a Clearly Defined Hedging Strategy, and whether it is a static or dynamic strategy.
- b. For each dynamic Clearly Defined Hedging Strategy, the company shall document the extent to which the Derivative Program and its associated Risk Factors are fully incorporated into the Cash Flow Model and the extent to which the Cash Flow Model is supplemented by the adjustment to stochastic reserves calculations.
- c. In addition, the company shall provide a certification and maintain documentation supporting such certification that each Derivative Program modeled as a Clearly Defined Hedging Strategy meets the requirements of a Clearly Defined Hedging Strategy. The certification shall include a statement to the effect that the implementation of the Derivative Program in the stochastic Cash Flow Model does not include knowledge of events that occur after any action dictated by the Derivative Program (i.e., the model cannot use information about the future that would not be known in actual practice). While clearly defined hedging strategies may change over time, any change in a Clearly Defined Hedging Strategy shall be documented and include an effective date of the change in strategy.
- d. A financial officer of the company (e.g., Chief Financial Officer, Treasurer or Chief Investment Officer) or a person designated by such financial officer who has direct or indirect supervisory authority over the actual trading of Derivative Instruments shall certify that each Derivative Program that involves anticipated future Derivative Instrument transactions is being used by the company in a manner consistent with the company's documentation of the program, and that each Derivative Program that is modeled

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a Clearly Defined Hedging Strategy meets the requirements of a Clearly Defined Hedging Strategy

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