

Concurrent Sessions 2: Your One Stop Guide to All Principle-Based Reporting

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Monday, August 31 11:45am-1:00pm ET



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Biographies - Rachel Hemphill

Rachel Hemphill, FSA, FCAS, MAAA **PBR Team Lead, Texas Department of Insurance**

Rachel Hemphill is the PBR Team Lead at the Texas Department of Insurance, working in the Financial Regulation Division.

Rachel has 7+ years of regulatory experience. Rachel has headed PBR review teams at the Texas and California Departments of Insurance, focusing on PBR reviews regarding VM-20, VM-21, VM-31 and VM-G. She has been very active in PBR Actuarial Report reviews as well as in NAIC task force work for Valuation Manual revisions. She also participates in various related American Academy of Actuaries groups related to PBR, including as a repeat speaker on regulatory reviews and other topics at PBR Boot Camp.

Rachel has a doctorate in Mathematics with a dissertation in Game Theory, is a Fellow of the Society of Actuaries (FSA), a Fellow of the Casualty Actuarial Society (FCAS), and a Member of the American Academy of Actuaries (MAAA).

Biographies- Ben Slutsker

Ben Slutsker, FSA, MAAA **Corporate Vice President & Actuary, New York Life Insurance Company**

Ben Slutsker is a Corporate Vice President & Actuary for New York Life Insurance Company, where he works in the Office of the Chief Actuary and is responsible for actuarial regulatory oversight. In past roles, Ben has worked in Individual Life Financial Reporting, New York Life International, BOLI/COLI Pricing, and previously led the implementation of Principles-Based Reserving.

Ben currently chairs the American Academy of Actuaries Annuity Reserves Work Group and the Society of Actuaries Life Financial Modeling Exam Curriculum Committee. In addition, he is a member of the Academy Life Practice Council, Life Valuation Committee, and PBR Implementation Work Group.

Ben is a Fellow of the Society of Actuaries (FSA) and a Member of the American Academy of Actuaries (MAAA).

Biographies- Angela McShane

Angela McShane, FSA, CERA, MAAA Manager, Insurance and Actuarial Advisory Services, Ernst & Young LLP

Angela is a Manager in the Insurance and Actuarial Advisory Services practice of Ernst & Young LLP's Financial Services Office. She is based in New York and has 7+ years of experience working in both consulting and industry. She serves as an advisor to medium and large insurance companies and is focused on Financial Reporting.

Angela has experience in pricing, assumption setting, modeling, model validation, governance, and GAAP and statutory financial reporting. She has focused on Principle Based Reserves for the past several years, including leading VM-20 implementations and validations at life insurance companies. In addition to her work, she has written articles and volunteered her time with a PBR NAIC task force, and serves on the Board of ASNY.

Angela is a Fellow of the Society of Actuaries (FSA), a Chartered Enterprise Risk Analyst (CERA) and a Member of the American Academy of Actuaries (MAAA).

Life VM-31 Overview and Disclosure Updates

Angela McShane, FSA, CERA, MAAA



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VM-31 Overview

VM-31 specifies the disclosure requirements for the NAIC Valuation Manual PBR calculations, which consist of VM-20 and VM-21.

It provides specific requirements to submit through a PBR Actuarial Report. These disclosures are intended to provide background support for the PBR modeled reserve calculations, and also include statutory financial statement VM-20 and VM-21 supplements, reliances, and certifications.

VM-31 vs. other documentation frameworks

Documentation Requirement	Accounting Framework	Focus	How can it be leveraged for VM-31?
VM-31	US Statutory	VM-20/21 prescribed/prudent estimates	
Model Audit Rule (MAR)	US Statutory	Statutory Valuation Controls	Control framework and validation checks
Sarbanes-Oxley (SOX)	US GAAP	GAAP Valuation Controls	PADs, experience assumption review, controls
Actuarial Opinion and Memorandum (AOM) / Cash Flow Testing (CFT)	US Statutory	Asset adequacy testing and documentation	Product descriptions, modeling methods, margins, validation checks
Own Risk and Solvency Assessment (ORSA)	ERM	Enterprise risk management and key risk factors	Materiality of risks, correlation between risk factors
Internal Documentation	Internal	Experience studies, memos, process descriptions	Assumption development, rationale, experience studies

Components of VM-31 for Life products

Executive Summary	Life Summary	Assumptions and Margins	Cash-Flow Models
Mortality	Policyholder Behavior	Expenses	Assets
Revenue-Sharing Assumptions	Reinsurance	Non-Guaranteed Elements	Exclusion Tests
Additional Information	Riders and Supplemental Benefits	Reliance Descriptions and Statements	Certifications

Key VM-31 Updates for Life Products in 2020

Major changes to existing sections

New required templates

Complete assumption tables to be submitted in Excel

New sections

Riders & Supplemental Benefits

Support and certifications for DET Certification Method

Additional details required

Serialtim post-level term testing

Model systems and model validation procedures/results

Mortality aggregation

Sensitivity testing and margin setting

Clarifications in VM-20 supplements

PBR Actuarial Report Templates: Overview

- **Prescribed PBR Templates**

- Template A: Distribution of Direct Life Insurance Business
- Template B: Distribution of Assumed Life Insurance Business (optional)
- Template C: Company Experience Studies

- **New Optional PBR Templates**

- The PBR Analysis Templates Task Force has created a mix of templates that can be used for:
 - Internal company analysis
 - VM-31 reporting purposes
- New optional templates will be made available for YE 2020 reporting

PBR Actuarial Report Templates: Example Template A

PBR Actuarial Report Template A Distribution of Direct Life Insurance Business

Company Name: ABC Life Insurance Company
 NAIC Company Code: 12345
 Valuation Year: 2019

TOTAL												
								115,000	50,800,000			
Underwriting Process Era												
1	2	3	4	5	6	7	8	9	10	11	12	13
VM-20 Reserving Category	Base Policy Product Type	Underwriting Process	Description of Underwriting Process	Start	End	Additional margin	Policy Count	Total Face Amount (in thousands)	Product Features	Target Market	Primary Distribution System	Comments
Term	ART to age 95	Simplified Issue	Short form application using 3 Yes/No Questions; Issue age < 60; Face Amount <\$100,000	6/30/1998	Current	N/A	25,000	1,200,000	Convertible to age 65	Low to Middle Income	Direct Marketing	
Term	ART to age 95	Full Underwriting	Long form application; Fluids, Physician Report, and Prescription Profile are ordered according to a requirements chart varying by issue age and face amount	1/1/1995	Current	N/A	10,000	2,400,000	Convertible to age 65	Middle Income	Independent	
Term	10 year Level Term with ART to age 95	Accelerated Underwriting	Long form application; Predictive Model using 15 criteria; Prescription Profile; Issue ages 20-50; Face Amount < \$1,000,000. See additional details in the PBR Actuarial Report.	6/30/2016	12/31/2017	5%	20,000	6,800,000	Convertible to age 65	Middle Income	Career	
Term	10 year Level Term with ART to age 95	Accelerated Underwriting	Long form application; Predictive Model using 30 criteria; Prescription Profile; Issue ages 20-50; Face Amount < \$1,000,000. See additional details in the PBR Actuarial Report.	1/1/2018	Current	10%	8,000	2,500,000	Convertible to age 65	Middle Income	Career	

VM-20 Blanks: Overview

- **Additional VM-20 Supplement Required**
 - Provide net premium reserve vs. deterministic reserve vs. stochastic reserve
 - Show each product line: i.e. term vs. WL vs. UL accumulation vs. ULSG vs. VUL, etc.
 - Sections for pre vs. post reinsurance reserves → Difference is the reserve credit
- **PBR Modifications to other Exhibits**
 - Analysis of Increase in Reserves During the Year, 5 Year Historical Data, Exhibit 5
 - VM-20 requires allocation of reserve credit to each treaty in Schedule S
- **Coordinating with other NAIC blank updates**
 - Summary of Operations and Analysis of Increase in Reserves will show more detail by product group → Ensure product group definition is consistent with VM-20 disclosures

VM-20 Blank Supplement: Part 1A

	Prior Year	Current Year	
	1 Reported Reserve	2 Reported Reserve	3 Due and Deferred Premium Asset
1. Post-Reinsurance-Ceded Reserve			
1.1. Term Life Insurance	0	XXX	XXX
1.2. Universal Life With Secondary Guarantee	0	XXX	XXX
1.3. Non-participating Whole Life			
1.4. Participating Whole Life	0	XXX	XXX
1.5. Universal Life Without Secondary Guarantee			
1.6. Variable Universal Life Without Secondary Guarantee			
1.7. Variable Life Without Secondary Guarantee			
1.8. Indexed Life Without Secondary Guarantee			
1.9. Aggregate Write-ins for Other Products			
2. Total Post-Reinsurance-Ceded Reserve (Sum of Lines 1.1 through 1.9)	0	XXX	XXX
3. Pre-Reinsurance-Ceded Reserve			
3.1. Term Life Insurance	0	XXX	XXX
3.2. Universal Life With Secondary Guarantee	0	XXX	XXX
3.3. Non-participating Whole Life			
3.4. Participating Whole Life	0	XXX	XXX
3.5. Universal Life Without Secondary Guarantee			
3.6. Variable Universal Life Without Secondary Guarantee			
3.7. Variable Life Without Secondary Guarantee			
3.8. Indexed Life Without Secondary Guarantee			
3.9. Aggregate Write-ins for Other Products			
4. Total Pre-Reinsurance-Ceded Reserve (Sum of Lines 3.1 through 3.9)	0	XXX	XXX
5. Total Reserves Ceded (Line 4 minus Line 2)	0	XXX	XXX

VM-20 Blank Supplement: Part 1B

	Current Year											
	SECTION A					SECTION B				SECTION C		
	4 Net Premium Reserve	5 Deterministic Reserve	6 Stochastic Reserve	7 Number of Policies	8 Face Amount	9 Net Premium Reserve	10 Deterministic Reserve	11 Number of Policies	12 Face Amount	13 Net Premium Reserve	14 Number of Policies	15 Face Amount
1. Post-Reinsurance-Ceded Reserve												
1.1. Term Life Insurance						XXX	XXX	XXX	XXX			
1.2. Universal Life With Secondary Guarantee	XXX	XXX	XXX	XXX	XXX							
1.3. Non-participating Whole Life												
1.4. Participating Whole Life										XXX	XXX	XXX
1.5. Universal Life Without Secondary Guarantee												
1.6. Variable Universal Life Without Secondary Guarantee												
1.7. Variable Life Without Secondary Guarantee												
1.8. Indexed Life Without Secondary Guarantee												
1.9. Aggregate Write-ins for Other Products												
2. Total Post-Reinsurance-Ceded Reserve (Sum of Lines 1.1 through 1.9)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3. Pre-Reinsurance-Ceded Reserve												
3.1. Term Life Insurance						XXX	XXX	XXX	XXX			
3.2. Universal Life With Secondary Guarantee	XXX	XXX	XXX	XXX	XXX							
3.3. Non-participating Whole Life												
3.4. Participating Whole Life										XXX	XXX	XXX
3.5. Universal Life Without Secondary Guarantee												
3.6. Variable Universal Life Without Secondary Guarantee												
3.7. Variable Life Without Secondary Guarantee												
3.8. Indexed Life Without Secondary Guarantee												
3.9. Aggregate Write-ins for Other Products												
4. Total Pre-Reinsurance-Ceded Reserve (Sum of Lines 3.1 through 3.9)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5. Total Reserves Ceded (Line 4 minus Line 2)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

VA VM-31 Disclosure Updates and Comparisons Between Life vs. VA

Ben Slutsker, FSA, MAAA



VM-31 Updates for VA: VM-21 Disclosures

Overview

- **Several changes made** to disclosures for variable annuity (VA) reserves compared to the old AG43/VM-21 disclosure requirements
- Requirements now align more closely with life insurance reserve disclosures located in VM-31. For some assumptions, the requirements are even identical between life and VA
- Encourage companies to **start implementing variable annuity VM-31 disclosure updates now** for 2020 if have not already started – expect report length and details to increase

VM-31 Updates for VA: Pre-2020 vs. Post-2020

Report Element	AG 43 / VM-21 (prior to 2020)	VM-21 (2020 and later)
Guidance Location	All disclosure requirements located within AG43/VM-21	Disclosure requirements located in VM-31: Section 3.E (“VA Summary”) and Section 3.F (“VA Report”)
Structure	No prescribed structure/outline for report	Prescribed outline for report, following the structure of VM-31
New Sections: New VM-21 Features	Standard scenario disclosures	Phase-in and multiple standard projection disclosures: decrement analysis, CTEPA, CSMP
New Sections: Old VM-21 Features	No disclosures on materiality, VA Supplementals, allocation, loans, or RBC requirements	Materiality, VA Supplements, Allocation, Contract Loans, RBC Reporting (optional for VM-31)

VM-31 Updates for VA: Revisions to Existing Sections

Report Element	AG 43 / VM-21 (prior to 2020)	VM-21 (2020 and later)
Executive Summary	Only required identifying the qualified actuary and describing the policies/contracts in scope of VM-21	Added descriptions of the target market, distribution, key product features, and grouping for each contract; also “high-level results” table
Assets	No distinct disclosures for general account vs. separate account assets	Separately address general account and separate account assets
Hedging	Document error factor and CDHS programs, but only required to be on file (not submitted)	Backtesting, safe harbor (linear instruments), justify $CTE_{70}(BE) < CTE(Adj)$ and fair value
Scenarios	Calibration for gross wealth ratios for equity funds and consistent/correlation between funds	Adds scenario reduction techniques, proxy construction, proxy funds not in ESG, implied volatility, non-prescribed generators

VM-31 Updates for VA: Revisions to Existing Sections

Report Element	AG 43 / VM-21 (prior to 2020)	VM-21 (2020 and later)
Mortality	Disclosure of assumptions, but no explicit rationale and experience studies disclosures	Includes rationale for grouping contracts, determination of plus/minus segments, experience studies, credibility, mortality improvement
Reinsurance	Assumptions/methodology, but no explicit disclosure to provide agreement details	List out all arrangements and details of each agreement
Sensitivity Tests	General sensitivity testing section	No single sensitivity testing section; still exists for some (e.g., mortality), but not others (e.g., lapse)
Certifications	Contains multiple certifications on compliance with principles and prudent estimate assumptions	Now part of VM-31; analogous to old but fairly different wording/content for each certification

VM-31: Life vs. Variable Annuity Disclosures

Jointly Cover Both VM-20 and VM-21	Only in VM-20	Only in VM-21	In both but many differences	In both but few differences	Nearly the same
General Requirements Section	NGE Section	Alternative Methodology	General VM-31 Structure	Expenses	Reinsurance
Executive Summary	Margin and Sensitivity Testing	Additional Standard Projection Amount	Policyholder Behavior	Certifications	Non-Guaranteed Elements
Table of Results in Executive Summary	Exclusion Testing	RBC Section and Decrement Analysis	Mortality	Grouping / Cash Flow Test Modeling	Life vs. VA Summary Sections

Highlights of Key Differences

- **Policyholder behavior assumptions** for VM-21 includes annuitizations, partial withdrawals, and utilization assumptions. VM-20 does not have these, but has disclosures for sparse data, data reliability, post-level term testing, and anti-selective lapses.
- Similar **asset requirements**, but VM-21 includes additional detailed requirements that cover CDHS requirements, error testing, and economic scenario generation that are not found in VM-20.
- VM-21 has **margin impact testing** and **sensitivity testing** sections, but VM-20 does not. However, VM-21 has a decrement analysis for the additional standard projection amount, and VM-20 does not have an equivalent.

VM-31: Life vs. Variable Annuity Requirements

VM-20

Summary: Table, assumption list, materiality, rationale, description of change in reserves

Modeling: Systems, segments, validation, simplifications

Reinsurance and Revenue-Sharing: Agreements, assumptions, modeling, pre-reinsurance reserve

Assets: Description, allocation, reinvestment strategy, NAER, fund mapping, some hedging/scenario disclosures

Certifications: Reliances, certifications, and closing paragraph

Liability: Mortality (e.g., credibility & underwriting), lapses, expenses, conversions, anti-selection adjustments

Exclusion Testing

NGE section and margin sensitivity testing

Largely Similar
(minor grouping, VM-G disclosure differences)

Fairly Similar
(ESG & hedging much more in-depth for VM-21)

Different
(Sections specific to VM-20 or VM-21; different liability sections)

VM-21

Summary: Table, assumption list, materiality, rationale, description of change in reserves

Modeling: Systems, segments, validation, simplifications

Reinsurance and Revenue-Sharing: Agreements, assumptions, modeling, pre-reinsurance reserve

Assets: Description, allocation, reinvestment strategy, NAER, fund mapping, detailed scenario/CDHS disclosures, error factors

Certifications: Reliances, certifications, and closing paragraph

Liability: Mortality (e.g., plus/minus segments), lapses, guarantee utilization, annuitization, partial withdrawals

Standard Projection Amount requirements and decrement analysis

Alternative Methodology and RBC Sections

PBR Reporting: 2019 Feedback and Future Changes

Rachel Hemphill, PHD, FSA, FCAS, MAAA



VA Early Adopter Pitfalls

Pitfall 1: Insufficient **documentation** for items previously only maintained “on file,” such as CDHS.



Recommendation: Provide the **documentation** required by VM-31, such as documentation showing that a hedging strategy meets the criteria to be a CDHS (lists specific risks being hedged, hedge objectives, etc.).

VA Early Adopter Pitfalls

Pitfall 2: Vague materiality discussions.



Recommendation: Clearly state the materiality standard, including how it was developed and how it was applied during the valuation process. Be sure that when items are described as immaterial, the determination makes sense based on the stated materiality standard.

VA Early Adopter Pitfalls

Pitfall 3: Inefficient reporting, including repetitive sections that could be made more succinct through the use of tables, or the inclusion of tables within the PDF report which are better suited for Excel attachments.



Recommendation: Internal review and discussions with auditors and regulators may help identify areas of the report that are unnecessarily bogged down and repetitive.

VA Early Adopter Pitfalls

Pitfall 4: Providing actual-to-expected (A/E) ratios with “E” only on a prudent basis and not also an anticipated experience basis.



Recommendation: Ensure there is adequate documentation not just of what assumptions are, but also why they are appropriate. This includes having clear A/E's that compare historical results to the selected best estimate assumption.

VA Early Adopter Pitfalls

Pitfall 5: Lack of support indicating why the number of scenarios that were run is sufficient, especially for a reliable conditional tail expectation at the 98th percentile (CTE98).



Recommendation: Show the number of scenarios used does not materially understate the result, both for the reserve and for TAR.

VA Early Adopter Pitfalls

Pitfall 6: Not determining plus/minus segments.



Recommendation: Follow VM-21 Section 11.A.3 and 11.A.4.

VA Early Adopter Pitfalls

Pitfall 7: Cell compression that appears to bias reserves downward.



Recommendation: If bias appears likely, can't rely on stating that it was not "intentional" bias.

Life PBR Reporting Ongoing Issues

Individual challenges in Life PBR Reporting have been consistent through 2017-2019, although improved in aggregate across companies.

These are addressed in the 2017 and 2018 VAWG Reports:

https://content.naic.org/sites/default/files/inline-files/cmte_e_valuation_analysis_wg_2017_pbr_review_report.pdf

https://content.naic.org/sites/default/files/inline-files/VAWG%202018%20PBR%20Review%20Report_12-6-19.pdf

VM-31 and ASOPs

If appropriately viewed as actuarial communication, VM-31 does not become an exhaustive list of all items needed for an actuary to review and understand the valuation.

If not, VM-31 becomes more expansive.

ASOP 41: Ability to Assess Reasonableness

Some Basic Considerations

Are the reasons that **you** can rely on your model clear from the report?

- Was a sufficient level of detail included for regulators to review the business profile, assumptions, and risks?

Can a reader tell what your **assumptions** are from the report?

- And **why** they were selected?

Can a reader tell what your **margins** are from the report?

- And **why** they were selected?

Can a reader tell what your **methods** are from the report?

- And **why** they were selected?

Consider having an actuary from a separate unit review the VM-31 Report for readability.

VM-31 and Building Trust

If PBR were to be viewed as a test of trust between the industry actuary and the regulator actuary, then VM-31 is the format of the test.

2021 Adopted Changes in VM-20, VM-21, and VM-31

2019-58

- Changes to **Templates** must follow standard VM Exposure/Adoption Process

2019-60

- Companies may use Limited Fluctuation for some business and Bühlmann for other Business, changes still require **Domiciliary Commissioner Approval**

2019-62

- Must model and **report on** reflection of excess mortality for conversion policies

2020-05

- NPR reflects continuous deaths and immediate payment of claims, including for riders/supplemental benefits (**report** change in method if not already following)



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2022+ Pending Changes to VM-20, VM-21, and VM-31

YRT APFs

- Reviewing Field Testing Results

2019-33

- Scoping in Individually Underwritten Group Life Business

2020-02

- Materiality and Simplifications vs. Omission of Elements

2020-03

- NPR calculations can be mean, mid-terminal or more exact methods



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2022+ **Potential** Changes to VM-20, VM-21, and VM-31

VA in VM-31

- Materiality
- Correct Typos / Vague Phrases
- Require Complete Listing of Simplifications & Approximations
- Separate Section for Sensitivity Tests
- A/E's
- Justification for Number of Scenarios for RBC
- Strengthen Other Areas due to Pitfalls?



2022+ Potential Changes to VM-20, VM-21, and VM-31

VM-21

- RMD Age
- RMD floor for PWD assumption
- WDCM
- Seriatim CSMP
- Standard Projection assumptions for no GMxBs
- Assumption updates

VM-20 & VM-21

- CDHS

VM-22

- ARWG work targeting 2023



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