**Statutory Valuation of**

**Individual Life and Annuity Contracts**

Errata for Volume 2

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# Introduction

The purpose of this document is to provide a list of the errata for Volume 2 of the *Statutory Valuation of Individual Life and Annuity Contracts*.

# Chapter 23

## Page 23

The last sentence of the first paragraph on Page 23 of Section 23.3:

As was discussed in Chapters 13 and 14, a term insurance policy or a universal life insurance policy with secondary guarantees may be subject to calculations based on VM-20 even if it was issued prior to January 1, 2017.

should be changed to:

A term insurance policy or a universal life insurance policy with secondary guarantees may be subject to calculations based on VM-20 even if it was issued prior to January 1, 2017. One example of where calculations based on VM20 may apply for a policy issued prior to 1/1/2017 is a policy that falls under Actuarial Guideline 38 section 8D. This section applies to certain ULSG policies (those with multiple charges or credits) issued between 7/1/2005 and 12/31/2012, and generally requires (with some exceptions) that the reserve be the greater of the one according to the methodology previously used by a company or the reserve calculated according to the Valuation Manual (with some modifications).

## Page 37

The formula in the first paragraph on Page 37 of Section 23.6.1:



should be changed to:



## Page 42

The formula for the net premium reserve at the bottom of Page 42 of Section 23.6.2 should be change from:



where

  = issue age of the *i*th policy in the group;

  = number of time periods from issue date to valuation date;

  = actuarial present value of future benefits on valuation date;

  = expense allowance;

  = annual valuation premium in the first policy year; and

  = present value of an annuity on valuation date.

To the following formula:



where

  = issue age of the *i*th policy in the group;

  = number of time periods from issue date to valuation date;

  = actuarial present value of future benefits on valuation date;

  = annual valuation premium in the first policy year; and

  = present value of an annuity on valuation date.

In addition, the following should be added:

*Net Premium Reserves for policies with a secondary guarantee in force are the greater of the results described above, and one that considers the mortality, interest rate and expenses in the secondary guarantee. This is further described in Section 3.B.6 of VM-20 of the valuation manual.*

## Page 48

The description of Column (4) in Figure 23.15 should be changed from:

(4) Invested Assets (excluding interest policy loans)

To

(4) Invested Assets (excluding policy loans)

## Page 54

The formula for the loan amount at the top of Page 54 of Section 23.7.1 is determined as follows:

,

where

  = policy loan value at time  ;

  = policy loan value at time ;

  = loan amount (i.e., amount borrowed by the policyholder) at time ;

  = loan repayment (i.e., portion of loan repaid by policyholder) at time ; and

  = interest on policy loan value at time at time .

For example, if the policyholder borrowed $1,000 in the second year to pay the premium, the loan amount . If the loan value in the 10th year was $10,000 and the insured died, then loan repayment would be . If the death benefit was $100,000, then in the 10th year the Summary of Operations would show death benefits paid of $100,000 and not $90,000. This is an important, but subtle point, and is why the present values of benefits in the determination of the deterministic reserve uses the gross death benefit.

## Page 57

The first sentence in quote on the top Page 57 of Section 23.7.2:

“Calculate the deterministic reserve as ab where…

should be changed to:

“Calculate the deterministic reserve as a-b where…

## Page 59

Item (6) in the first paragraph on Page 59 of Section 23.8:

1. The stochastic reserve is the sum of CTE 70, the additional amount from Step 5, and PIMR balance

should be changed to:

1. The stochastic reserve is the sum of CTE 70, the additional amount from Step 5, less the PIMR balance

Specifically, with respect to the PIMR, the PIMR should be subtracted from the ultimate reserve number (deterministic and stochastic), because the Interest Maintenance reserve is a reserve item, meant to be paid out as a substitute for investment earnings and high income assets that were sold that were originally purchased to support that product (or low income assets that were sold at losses, to reflect their negative earnings.)  Therefore, the sign in the Chapter 23 VUL spreadsheet should be subtracting the PIMR.

Separately, with regard to the opening statement that the PIMR “is always included with other liabilities where determining the starting assets”, the Valuation Manual makes it clear that there are three asset choices and the PIMR is only in one (See Guidance Note in the 2020 Valuation Manual, page 20-30).  The 2020 Valuation Manual can be found at: <https://www.naic.org/documents/pbr_data_val_2020_edition.pdf?96>

# Chapter 29

The Excel Workbook *Chapter 29 - Risk Based Capital - Illustration v1* had a formula error that affected the example in Section 29.4. The *Total RBC for Low Risk* in the Low-Risk portion of *Interest Rate Risk (C-3)* worksheet was not summing correctly. The Excel Workbook *Chapter 29 - Risk Based Capital - Illustration v2* replaces this workbook.

Below are the exhibits in the example in Section 29.4 that were affected by this error.

## Page 411

The exhibit at the bottom of Page 411 of Section 29.4 should be replaced with the following exhibit:



## Page 412

The exhibit at the bottom of Page 412 of Section 29.4 should be replaced with the following exhibit:



## Page 413

The exhibit at the bottom of Page 413 of Section 29.4 should be replaced with the following exhibit:

