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Actuarial Guideline: XLIII Statutory and Tax Issues

By Edward L. Robbins and Richard N. Bush

INTRODUCTION

Actuarial Guideline XLIII (AG43), often referred to as the “VA CARVM guideline,” was the end result of a project to provide updated guidance on reserve methods for variable annuities by the Variable Annuity Reserve Working Group. That group was formed by the American Academy of Actuaries in January 2003 to examine issues surrounding the development of a reserve methodology for variable annuity products. AG43 generally describes how to determine reserves for variable annuities. This guideline replaces Actuarial Guideline 34 (AG34) defining reserves for guaranteed minimum death benefits (GMDBs) and Actuarial Guideline 39 (AG39) defining reserves for guaranteed living benefits (GLBs). AG43 went through a number of drafts, with the final version being adopted Aug. 20, 2008. AG43 is effective Dec. 31, 2009¹ for all contracts issued on or after Jan. 1, 1981.² Prior to its adoption as AG43, the proposed guideline was entitled Proposed Guideline “VA CARVM.”

The background to AG43 gives the reasons for the adoption of AG43:

For many years regulators and the industry have struggled with the issue of applying a uniform reserve standard to these contracts and in particular some of the guaranteed

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Taxing TIMES SUPPLEMENT

NOTE FROM THE EDITOR

Welcome readers to this special supplement of *TAXING TIMES*. In this supplement, Edward L. Robbins and Richard N. Bush provide a comprehensive look at Actuarial Guideline 43 (VA CARVM). The article examines the statutory implications of AG 43 for the determination of reserves for annuity writers. In addition, it examines issues that arise in the determination of tax reserves for annuity contracts. Given the significance of the topic discussed in this article, the decision was made to separately publish it in this supplement. ◀

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benefits referenced above. Current approaches make assumptions about product design, contractholder behavior and economic relationships and conditions. The economic volatility seen over the last few decades, combined with an increase in the complexity of these products, have made attempts to use these approaches for measuring economic-related risk less successful.

The guideline addresses these issues by including an approach that applies principles of asset adequacy analysis directly to the risks associated with these products and guarantees.

From a statutory perspective, with the adoption of AG43, variable annuity writers will need to apply a new and complex framework to the determination of reserves for variable annuity contracts. AG43 replaces the prescribed assumptions and methodologies in AG34 and AG39 with a quasi principle-based methodology, incorporating both a deterministic, formulaic component and a stochastically generated excess amount. This article provides an in-depth discussion on the application of the AG43 methodology for computing statutory reserves.

From a tax perspective, as anticipated, there are a number of unresolved issues that arise in the determination of tax reserves for annuity contracts subject to AG43. In early 2008, the Internal Revenue Service (Service) issued Notice 2008-18, alerting life insurance companies to federal income tax issues that might arise as a result of the adoption of pro-

posed guideline VA CARVM. In that notice, the Treasury Department (Treasury) and the Service expressed concerns over the applicability of proposed guideline VA CARVM to the calculation of tax reserves under section 807 and requested comments from the industry. While the industry has responded to these concerns, it is not expected that Treasury or the Service will be issuing near term guidance on these issues. In this article, we identify a number of these tax issues, and provide thoughts on how AG43 might be applied to the calculation of tax reserves.

NATURE OF THE GUARANTEES ON VARIABLE ANNUITY PRODUCTS: GUARANTEED MINIMUM DEATH BENEFITS AND VARIABLE ANNUITY GUARANTEED LIVING BENEFITS

As noted, AG43 was adopted largely in response to new product designs, especially Guaranteed Minimum Death Benefit (GMDB)s and Guaranteed Living Benefit (GLB)s. A GMDB is a guaranteed benefit providing, or resulting in the provision that an amount payable on the death of a contract holder, annuitant, participant or insured will be increased and/or will be at least a minimum amount. Only guarantees having the potential to produce an amount payable on death that exceeds the account value, or in the case of an annuity providing income payments, an amount payable on death other than continuation of any investment-linked income, are included in this definition. Examples of GMDBs include return of premium, rollup of premiums less withdrawals at stated rates of interest, ratchets such as maximum anniversary values, resets and enhanced death benefits (*e.g.*, additional death benefit equal to 40 percent of the gain in the contract).³ A waiver of surrender charges on death ordinarily would not be considered to be a GMDB because the benefit paid would not exceed the account value.

A GLB is a guaranteed benefit providing, or resulting in, one or more guaranteed benefit amounts payable or accruing to a living contract holder or living annuitant, under contractually specified conditions (*e.g.*, at the end of a specified waiting period, upon annuitization, or upon withdrawal of premium over a period of time), that will increase contractual benefits should the account value fall below a given level or fail to achieve certain performance levels. Only guarantees having the potential to provide benefits with a present value as of the benefit commencement date that exceeds the account value referenced by the guarantee are included in this definition.⁴



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GLBs currently include the following types of benefits:⁵

- Guaranteed Minimum Accumulation Benefits (GMABs);⁶
- Guaranteed Minimum Income Benefits (GMIBs, for example, annuitization at stated income rates of the larger of the account value and a rollup of premiums less withdrawals at stated rates of interest);⁷
- Guaranteed Minimum Withdrawal Benefits (GMWBs);⁸
- Guaranteed Lifetime Withdrawal Benefits (GLWBs); and
- Guaranteed Payout Annuity Floors (GPAFs).⁹

Payout annuities without minimum payout or performance guarantees are considered neither to contain nor to be GLBs.¹⁰

AG43 GENERALLY

Some of the important changes made by AG43 include:

- AG43 defines the reserve method for all variable annuities and also prescribes certain reserve assumptions for other than mortality and interest. Prior guidance for annuity contracts in Actuarial Guideline 33 (AG33) did not specifically define a reserve method for benefits for variable annuities. Rather, AG34 defined reserves for GMDBs and AG39 defined reserves for GLBs. Neither AG34 nor AG39 applied to variable annuities generally.
- Neither AG34 nor AG39 provides any guidance on whether the reserve for benefits other than the GMDB reserve or the GLB reserve should be held in the General Account or in the Separate Account. In contrast, AG43 requires an allocation of the total reserve between the General Account and Separate Account and prescribes a method for performing this allocation.
- AG43 advances the concept of a stochastic reserve. Although both AG34 and AG39 contained provisions for stochastic reserves, under AG39 that reserve was required only for GLBs and not for all benefits under the contract. Under AG43, the Conditional Tail Expectation Amount (CTE Amount or the stochastic reserve)¹¹ includes all benefits under the contract, not only GMDBs or GLBs.

AG43 requires that reserves for contracts falling within its scope be based on a minimum floor determined using defined assumptions computed on a seriatim (contract-by-contract) method, referred to as the Standard Scenario Amount (SSA). The SSA is equal to the sum of the individual contract Standard Scenario Reserves (SSRs). An additional reserve,

the CTE Amount, is required, such that the final reserve for the variable annuity portfolio in question is equal to the SSA, plus the excess, if any, of the CTE Amount over the SSA. The CTE Amount is calculated by using multiple alternative stochastic projections of the cash flows of the contractholder benefits, pertinent expenses, and the assets supporting these contracts, over a broad range of assumptions, some stochastically generated and some deterministic. For the deterministic assumptions, prudent estimates should be used.¹²

The CTE Amount concept is a statistical risk measure that provides enhanced information about the tail of a distribution above that provided by the traditional use of percentiles. Instead of identifying only a value at a particular percentile and thus ignoring the possibility of extremely large values in the tail, CTE recognizes a portion of the tail by providing the average over all values in the tail beyond the CTE percentile.¹³ The guideline adopts as a measure the CTE (70), *i.e.*, the average of the values in the highest (worst) 30 percent of the stochastic scenarios. For distributions with “fat tails” from low probability, high impact events such as those covered by the guideline, the use of the CTE concept will provide a more revealing measure than use of a single percentile requirement.¹⁴

To obtain the CTE Amount, a company uses a model of the annuity portfolio and its supporting assets, and may run, for example, 1,000-2,000 scenarios. For each scenario, the company determines a result, called the Scenario Greatest Present Value (SGPV).¹⁵ The SGPVs are ranked, and the total of all such values are ranked from the lowest (best) to highest (worst) values. The 70th percentile result of 1,000 scenarios, for example, is the 700th such scenario, the lowest value in the highest 30 percent of all SGPVs. The average of all scenarios in that resulting top 30 percent becomes the CTE Amount.

AG43 appears to anticipate that companies might base the CTE Amount on business in force as of a date prior to the valuation date, such as September 30. Specifically, subsection (C) of Appendix 3, Paragraph A3.1, titled “Illustrative

The CTE Amount concept is a statistical risk measure that provides enhanced information about the tail of a distribution above that provided by the traditional use of percentiles.

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Application of the Standard Scenario Method to a Projection or Model Office” references the generation of the CTE Amount via “a projection of an in-force prior to the statement date and/or by use of a model office,” for example as of September 30. This introduces a theoretical issue for tax purposes regarding the appropriateness of the CTE Amount as a deductible reserve when the CTE Amount is calculated as of an earlier date than December 31.

Section 807(c) may be read to require that a contract actually be in force on December 31 in order for a reserve to be held and deducted for the contract. Similarly, section 811(c)(1) does not permit a reserve to be held prior to the time a premium is received. Thus, it is unclear whether for tax purposes the projection would be allowed. If not, a company may be required to recompute the reserve based on a December 31 seriatim valuation for tax purposes. Otherwise, the December 31 valuation (based on projections only) would assume policies that did not exist at the valuation date (so that the reserve might not be considered “held” and thus not allowed as a deduction) or could otherwise be subject to a statutory cap of zero.

There are at least two counterarguments to that challenge. First, the projection is intended to be a reliable estimate of the contracts actually in force on the valuation date, and in general, estimates are permissible for accrual method taxpayers unless specifically disallowed. Second, section 811(a) requires a company to follow regulatory accounting except as otherwise provided under accrual accounting rules. Thus, section 811(a) arguably permits the use of a projection of in-force. In *Commissioner v. Idaho Power Co.*,¹⁶ the Court stated that, “where a taxpayer’s generally accepted method of accounting is made compulsory by the regulatory agency and that method clearly reflects income, it is almost presumptively controlling of federal income tax consequences.” [Emphasis in original.]

The primary focus in this paper will be on the SSA, rather than the CTE. We believe that the CTE Amount raises a number of significant tax issues as to the deductibility of the CTE Amount (apart from its role in the Section 807(d)(1) “statutory cap,” as discussed below). On the other hand, the SSA does not give rise to these same issues and this reserve should meet the tax standards for deductibility, although the reserve must be adjusted for interest and mortality to a tax basis where necessary.

SCOPE OF AG43

AG43 applies to the following contracts:¹⁷

- Individual deferred variable annuities whether or not they include GMDBs or GLBs.¹⁸
- Individual immediate variable annuities whether or not they include GMDBs or GLBs.¹⁹
- Group annuity contracts that are not subject to CARVM but that contain guarantees “similar in nature” to GMDBs or GLBs;²⁰ and
- All other products that contain guarantees “similar in nature” to GMDBs or GLBs, even if the insurer does not offer the mutual funds or variable funds to which these guarantees relate, but only if there is no other explicit reserve requirement.²¹
- Variable universal life products, to the extent they include guaranteed living benefits not having a separate reserve standard, but only to the extent of establishing a reserve or capital requirements for those benefits. If a Variable Universal Life (VUL) contract provides death benefits similar to group life coverages that provide GMDB amounts for (unrelated) mutual funds, those benefits would be covered on a standalone basis.²²

If a benefit that is similar in nature to a GMDB or GLB is offered as part of a contract that has an explicit reserve requirement other than AG43 but there is no explicit reserve requirement for that benefit, AG43 is applied to the benefit on a standalone basis. That is, for purposes of the reserve calculation, the benefit is treated as a separate contract and the reserve for the underlying contract is determined according to the explicit reserve requirement.²³

To be “similar in nature,” a guarantee must provide a minimum death or living benefit to a contract holder that relates to benefits derived from funds for which investment risk is ordinarily borne by the contract holder. The guaranteed benefit should be in lieu of, or supplemental to, a benefit that is dependent upon the growth of contract holder premiums that have been invested in Separate Accounts, mutual funds similar to the benefit provided by variable annuity products, or other market value funds or market indexed funds.

Footnotes 4 and 5 in AG43 contain guidance in interpreting the meaning of “similar in nature” to GMDBs or GLBs.²⁴ Footnote 5 cites a group life contract that wraps a GMDB

around a fund as an example of a contract for which there is no explicit reserve requirement but that is subject to AG43 because it contains a benefit similar in nature to a GMDB.²⁵ However, for an individual variable life contract with a GMDB and a benefit similar in nature to a GLB, AG43 generally would apply only to the GLB-type benefit, since there is an explicit reserve requirement that applies to the variable life contract and the GMDB.²⁶

A General Account annuity product incorporating minimum death or living benefits and having a cash value minimum floor established by compliance with the Standard Nonforfeiture Law, but having amounts credited to it based on the investment performance of a segmented portfolio of assets, such as certain types of bonds, does not fall under AG43. This is because the product is not a variable annuity or one of the other similar products specified in the requirements as falling within scope. The death and living benefits are not “similar in nature” to GMDBs or GLBs because the premiums have not been invested in Separate Accounts or mutual funds similar to the benefits provided by variable annuity products.²⁷

Any product or benefit design that does not clearly fit within the scope of AG43 should be evaluated by taking into consideration factors that include, but are not limited to, the nature of the guarantees, the definitions of GMDB and GLB, and whether the contractual amounts paid in the absence of the guarantee are based on the investment performance of a market-value fund or market-value index (whether or not part of the company’s Separate Account).²⁸

Modified guaranteed annuities that fall under the scope of the Modified Guaranteed Annuity Model Regulation are also excluded from AG43.²⁹ However, AG43 does apply to contracts that include one or more subaccounts containing features similar in nature to those contained in MGAs (e.g., market value adjustments).³⁰ Thus, a variable annuity product with a GMDB or GLB that has both variable and modified guaranteed subaccounts is subject to AG43 even though standalone modified guaranteed annuity contracts are excluded from the scope of these requirements.³¹

The following individual or group life or annuity contracts that have a GMDB or other equity investment guarantees are excluded from AG43 because each of these guarantees has an explicit requirement other than AG43:³²

- VUL products that contain minimum guaranteed death benefits, regardless of fund performance, as long as stated minimum premium payment rules have been satisfied by the policyholder. Reserve requirements covering these minimum guaranteed benefits are prescribed in Actuarial Guideline 37.³³
- Equity Indexed Annuities (EIAs), which can theoretically provide more extensive equity investment guarantees, including forms of return of premium GMDBs or roll-up guarantees depending on whether the annuitant lives or dies. Reserve requirements for EIAs are prescribed in Actuarial Guideline 35.
- Group annuity products such as those funding 401(k), 457, 403(b), etc. plans that do not have guaranteed living or death benefits.³⁴
- Separate Account products that guarantee an index and that do not offer guaranteed benefits.³⁵

TAX ISSUES WITH RESPECT TO THE SCOPE OF AG43

Notwithstanding the rule that the benefit is treated as a separate contract to compute statutory reserves under AG39, for purposes of the AG39 calculation in determining Federally prescribed reserves on contracts issued prior to the effective date of AG43, the benefit would not be treated as a separate contract for purposes of section 807(d) because the benefit is not a qualified supplemental benefit (QSB), pursuant to the definition of a QSB in section 807(e)(3)(A). Therefore, the reserve for the benefit is aggregated with the AG39 base reserve prior to the required comparisons with the net surrender value and statutory reserve. There is no question that, for purposes of the AG43 tax reserve calculations on contracts issued on or after the effective date, the several components of the AG43 SSR (primarily the Basic Adjusted Reserve and Accumulated Net Revenue, described below) are treated in aggregate prior to the net surrender value and statutory reserve comparisons.

When an actuarial guideline is adopted by the National Association of Insurance Commissioners (NAIC), the guideline becomes the NAIC prescribed method for computing both statutory reserves and tax reserves. It is clear that for tax purposes AG43 is effective for contracts issued after it is ad-

Any product or benefit design that does not clearly fit within the scope of AG43 should be evaluated. ...

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opted and becomes effective. There is, however, an issue as to whether AG43 applies for tax purposes to contracts that were issued prior to its adoption and effective date. Of course, this issue is not unique to the adoption of AG43 and is discussed at length in Robbins and Bush book, *U.S. TAX RESERVES for LIFE INSURERS*, Chapter 4, Section 4.10.1.

Assuming that AG43 applies for tax purposes only to contracts issued after its adoption or effective date, the statutory methodology for all in-force contracts issued on or after Jan. 1, 1981, will be based on AG43, while the tax basis methodology for previously issued contracts will be based on the existing, historical applicable actuarial guidelines, generally AG33, AG34 and AG39. Because of the section 807(d) rules on tax reserve calculations, while the federally prescribed reserve must be compared to the statutory reserve on a contract-by-contract basis, this “nonparallel” pattern is likely to lead to statutory reserve excesses over federally prescribed reserves on some contracts and/or statutory capping on other contracts.

It is also worth while to briefly discuss the issue of “combination contracts,” *i.e.*, variable annuity contracts containing Market Value Adjusted Annuity (Modified Guaranteed Annuity, or MGA) fund options. For statutory reserving purposes, the NAIC Model Regulation on Modified Guaranteed Annuities applies to compute reserves on the MGA portion of the combination contract to obtain the Basic Reserve and Basic Adjusted Reserve, described below, for which separate MGA-specific guidance exists. On the contrary, the Accumulated Net Revenue component of the SSR, also described below, is calculated for the contract as a whole, inasmuch as the GMDB and GLB benefits would apply to the contract as a whole.

From a tax perspective, Treas. Reg. §1.817A-1(a) describes the requirements for the federally prescribed reserve for MGAs. That regulation states the following, in pertinent part:

The term modified guaranteed contract (MGC) is defined in section 817A(d) as an annuity, life insurance, or pension plan contract (other than a variable contract described in section 817) under which all or parts of the amounts received under the contract are allocated to a segregated account.

This language implies that one would use the same process for tax basis valuation, *i.e.*, calculation of the Basic Reserve and Basic Adjusted Reserve for tax purposes on a standalone basis

for the MGA portion of the contract, but that the Accumulated Net Revenue calculations would be for the contract as a whole.

SSR FOR CONTRACTS WITHOUT GMDBS OR GLBS

For a contract without any GMDBs or GLBs, the SSR is the “Basic Reserve.”³⁶ The Basic Reserve for a contract is determined by applying AG33 principles to the contract and by ignoring any GMDBs or GLBs.³⁷ Waiver of surrender charges on death and guaranteed annuitization options are types of benefits that are included in the Basic Reserve. The calculation of the Basic Reserve is similar to the concept of the “Projected Unreduced Account Value” (used for the B-Stream and C-Stream found in AG34). For elective benefits used in the calculation of the Basic Reserve, an election rate that causes the highest reserve to be held must be assumed (usually 100 percent or zero).³⁸

The Basic Reserve for a contract cannot be less than the cash surrender value.³⁹ In addition, AG33 requires a “93 percent of account value” minimum reserve for contracts with language providing that, at the time of annuitization the annuity purchase is permitted to be at the rate offered to new purchasers of immediate annuities at such date, if such rate provides a higher benefit than would result from the purchase rates provided in the contract.⁴⁰ This requirement would apply to the Basic Reserve and it would also appear that Actuarial Guideline 13 (AG13) applies to determine whether surrender penalties are taken into account.⁴¹ Mortality rate assumptions are specified as 70 percent of the 1994 Variable Annuity MGDB Mortality Tables (1994 MGDB tables) through age 85 increasing by 1 percent each year to 100 percent of the 1994 MGDB tables at age 115.⁴²

CARVM requires the account value to be projected forward to determine the benefits under the contract. The growth rate used to project the account value forward will be referred to as the Forward Rate. The Basic Reserve assumes a Forward Rate for any fixed Separate Account and General Account options equal to the rates guaranteed under the contract.⁴³ There is, however, no guaranteed interest rate that can be used as the Forward Rate for variable subaccounts. Thus, the calculation of the Basic Reserve assumes a Forward Rate on variable Separate Account assets based on the applicable statutory valuation rate less “appropriate asset based charges,” including charges for any GMDBs or GLBs.⁴⁴ AG43, like AG34, does not define what these “appropriate asset based charges”

are.⁴⁵ Just as for the AG34 B-Stream and C-Stream, no asset drop is taken into account in determining projected benefits in the calculation of the Basic Reserve.

The statutory valuation interest rate used to calculate either the Basic Reserve Forward Rate for variable subaccounts or the interest rate used to determine the present value of benefits is not specifically defined in AG43.⁴⁶ Instead, prior guidance in AG33 and in the Standard Valuation Law (SVL) must be used to determine the interest rate, and it would appear that the approach used in AG34 to determine the Forward Rate is appropriate.

When the Forward Rate equals the valuation rate less appropriate asset-based charges, the Basic Reserve will be less than or equal to the fund value during the surrender charge period when there are back-loaded surrender penalties. Interestingly, due to the link between the valuation interest rate and the Forward Rate, a greater valuation interest rate results in a higher reserve, given a constant fee percentage and other items being equal. The effect, however, is generally minor. Of most significance is the amount of the “appropriate asset based charges” used in the process.

Under the SVL and under AG33, the valuation interest rate depends on six factors: 1) whether the annuity is a single premium immediate annuity; 2) whether there are deemed to be cash settlement options; 3) the existence of “future interest guarantees” (guarantees with respect to future considerations); 4) the Guarantee Duration; 5) the Plan Type; and 6) whether the annuity is valued on an issue-year or change-in-fund method.⁴⁷ In general, whether a “future interest guarantee” exists is determined using the terms of the contract⁴⁸ and should be determined at the contract level.⁴⁹

AG33 requires the guarantee duration and the Plan Type to be determined at a benefit level.⁵⁰ In contrast, under AG33, the determination of whether a “future interest guarantee” exists and whether cash settlement options exist should be made at the contract level.⁵¹ Whether or not this holds true for a variable annuity is unclear. It may be considered more appropriate to determine these two factors at the subaccount level rather than at the contract level. Both the fixed and variable pieces provide for cash settlement options under a typical variable annuity, so this is not an issue as a practical matter. This is not the case with respect to “future interest

guarantees.” At the contract level, a variable annuity may contain such a guarantee where there is a fixed account option, but there is no guarantee at the variable subaccounts. The argument to make this determination at the subaccount level is that AG43 provides the methodology for calculating future benefits separately for fixed account options versus nonfixed account options and does not assume transfers between nonfixed and fixed account options. There is a reference in calculating Accumulated Net Revenue to determine whether a contract has “future interest guarantees” on future premiums or cash settlement options. However, for this purpose, the guideline states simply that whether a contract has “future interest guarantees” is determined using the terms of the contract.⁵²

As noted, the Plan Type depends on the benefit stream being valued.⁵³ For example, to determine the present value of death benefits or of life annuitization options, Plan Type A should be used because the benefits are paid assuming no surrenderable values under this benefit. On the other hand, it is unclear whether to measure surrender benefits using a Type A or a Type C interest rate (assuming no market value adjustment feature).⁵⁴

The issue in treating the surrender benefit as Plan Type A is whether the contract should be considered to allow a policyholder to withdraw funds only with an adjustment to reflect changes in interest rates or asset values. Since the assets cannot be surrendered except at market value, a strong argument can be made that a Plan Type A interest rate should be used. There is no disintermediation risk to the company in a variable product, and therefore no C-3 risk. Since Plan Type purports to measure C-3 risk (the greater the C-3 risk, the lower the valuation interest rate), it would seem reasonable that a variable benefit should be treated as a Plan Type A benefit. In addition, if the policyholder surrenders the policy, the change in asset value is clearly reflected in the reserve released.

When the Forward Rate equals the valuation rate less appropriate asset-based charges, the Basic Reserve will be less than or equal to the fund value during the surrender charge period when there are back-loaded surrender penalties.

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TAX ISSUES WITH RESPECT TO THE BASIC RESERVE

The significant tax issue with respect to the calculation of the Basic Reserve is whether projected account values should be computed at a Forward Rate based on the tax basis valuation interest rate [*i.e.*, the greater of the Applicable Federal Interest Rate (AFR) or the prevailing state assumed interest rate (PSAR)] or whether the PSAR always should be used for this purpose. There is no question that the higher of the AFR or PSAR must be used to discount the benefits.

If the Forward Rate is linked to the reserve valuation, or discount rate, the interest rate does not make a significant difference in the calculation of the Basic Reserve.

The better argument is that the Forward Rate should be based on the tax basis valuation interest rate. Section 807(d)(2) states that the amount of reserve shall be determined “by using -- (B) the greater of -- (i) the applicable Federal interest rate, or (ii) the prevailing State assumed interest rate” The statute does not limit by its terms the use of the interest rate to the discount factor applied to determine the present value of benefits. Rather, section 807(d)(2)

broadly states that the reserve is computed “using” the greater of the AFR or PSAR. Thus, whenever the calculation of the statutory reserve requires the use of the PSAR, it is consistent with section 807(d)(2) to use the greater of the AFR or PSAR, not only as the discount assumption for tax reserves, but also that the Forward Rate, being a function of the discount rate, should likewise be based on the greater of these two values.

If the Forward Rate is linked to the reserve valuation, or discount rate, the interest rate does not make a significant difference in the calculation of the Basic Reserve. More significant is the amount of the asset fees used in the calculation and the resulting difference between the Forward Rate and the discount rate. To disconnect the Forward Rate by using the PSAR (less asset based fees) as the Forward Rate while using the AFR (when it is higher) to discount the benefits so determined would result in a significant mismatch of the expected reserve that is *not* the result of merely using a higher interest rate to value benefits. Moreover, the linkage is conceptually the right answer. The logical connection between the discount rate and the Forward Rate is that if the discount

rate reflects a gross investment return, then the fund will grow at the rate equal to that gross return less asset fees.

Of course, where CARVM requires the use of the guaranteed interest rate in the contract to grow a fund (such as in a typical deferred annuity with guaranteed interest rates or for the fixed portion of a variable annuity), the tax reserve is likewise grown at the contract guaranteed rate, except to the extent section 811(d) applies.⁵⁵

The calculation approach for the Basic Reserve is well illustrated in Chapters 15 and 16 of *U.S. TAX RESERVES for LIFE INSURERS*.⁵⁶ Chapter 15 gives guidance on the general CARVM method, while Chapter 16 describes how to compute the Forward Rate for variable annuities.

SSR FOR CONTRACTS WITH GMDBS OR VAGLBS

For contracts with guaranteed benefits, the SSR is equal to $(a) + (b) - (c)$, where “(a)” is the Basic Adjusted Reserve, “(b)” is the negative of the most negative present value of the Accumulated Net Revenue (ANR), and “(c)” is the value of Aggregate Reinsurance and hedges. Thus, for contracts with guaranteed benefits, the SSR is defined by reference to three separate calculations.⁵⁷ The SSR cannot be less than the cash surrender value of the contract.

- The first calculation (a) is the Basic Adjusted Reserve (BAR) calculated for the contract.⁵⁸ The BAR is equal to the Basic Reserve described above for contracts without GMDBs or GLBs except that free partial withdrawal provisions are disregarded when determining surrender charges in applying Guideline 33.⁵⁹ The BAR is not floored at the cash surrender value; rather the cash value comparison is made against the total of $(a) + (b) - (c)$.⁶⁰
- The second calculation (b) is the negative of the lowest present value of (*i.e.*, most negative present value of) the ANR. That is, the ANR is tested for each future calendar year end, to obtain the future year end that yields that lowest present value. This amount cannot be negative. ANR is determined according to the rules described below.⁶¹ In effect, broadly speaking, this calculation measures the liability for GMDBs and GLBs whose present value is in excess of account values and generally can be viewed as replacing the value of the “A-Stream” (*i.e.*, the value of GMDBs) in Guideline 34 and the reserve for GLBs determined in Guideline 39.

- The third calculation is to reduce the first two calculated values by Aggregate Reinsurance and hedges.⁶²

ACCUMULATED NET REVENUE

As noted above, the second calculation is the greatest present value of the negative of the ANR (but not less than zero). The present value is determined using a discount rate (DR) equal to the valuation interest rate specified in the SVL for annuities based on an issue year basis using Plan Type A and a guarantee duration greater than 10 years but not more than 20 years.⁶³ Conceptually, the contract guarantees are being accounted for in the determination of ANR in such a manner as to result in approximately the average present value of the worst 30 percent of all scenarios, which is the tail scenario for a CTE(70) measure.⁶⁴

The Accumulated Net Revenue at the end of a projection year “t” (ANR_t) is equal to (i) + (ii) - (iii), where:⁶⁵

- is the Accumulated Net Revenue at the end of the prior projection year (ANR_{t-1}) accumulated at the DR to the end of the current projection year. The ANR at the beginning of the projection (ANR_0) is zero.
- is equal to the margins generated during the projection year on account values accumulated to the end of the projection year using the DR; and
- is equal to the contract benefits in excess of account values applied, and considering individual reinsurance premiums and individual reinsurance benefits payable or receivable during the projection year accumulated at the DR to the end of the projection year.

Margins generated during a projection period on funds supporting the account value as determined under (ii) are transferred to the ANR and are subsequently accumulated at the discount rate described above in calculating the value of (i) for the ensuing year. In the case of required account transfers, assets for each class supporting account values are to be reduced in proportion to the amount held in each asset class at the time of transfer of margins or any portion of account value applied to the payment of benefits.⁶⁶

No future deposits to the account value are assumed unless required by the terms of the contract to prevent contract or guaranteed benefit lapse, in which case they must be modeled. When future deposits must be modeled—to the extent not inconsistent with contract language—the allocation of the deposit to funds must be in proportion to the contract’s current allocation to such funds.⁶⁷ Similarly, no transfers between funds may be assumed in the projection unless required by the contract (*e.g.*, transfers from a dollar cost averaging fund or contractual rights given to the insurer to implement a contractually specified portfolio insurance management strategy or a contract operating under an automatic re-balancing option). When transfers must be modeled—to the extent not inconsistent with contract language—the allocation of transfers to funds must be in proportion to the contract’s current allocation to funds.⁶⁸

Table I below illustrates the basic concept of how ANR is computed. The discount rate is assumed to be 5 percent.

Table I
Illustration of Accumulated Net Revenue

Year	Beginning Balance - (ANR_t)	0.05 Interest ¹	Value of (i)	Value of Margins ² (ii)	Value of Benefits ³ (iii)	Negative of Accumulated Net Revenue --(i) + (ii) - (iii)	PV
1	\$0.00	\$0.00	\$0.00	\$42.00	\$45.00	\$ 3.00	\$2.86
2	3.00	0.15	3.15	51.00	60.00	12.15	11.02
3	12.15	0.61	12.76	60.00	75.00	27.76	23.98

¹ Interest at discount rate (DR) of 5 percent.

² The value of margins accumulated to the end of the year is an assumed amount.

³ The value of benefits in excess of account values applied is an assumed amount.

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At the beginning of Year 1, the Accumulated Net Revenue (ANR₀) at the end of the prior year is zero. This is the value of (i) in Year 1. The value of (ii) is equal to the margins generated during the projection year on account values accumulated to the end of the projection year using the discount rate. This is an assumed value of \$42 for Year 1. The value for (iii) is equal to the value of contract benefits in excess of account values. This is an assumed value of \$45. The negative of the Accumulated Net Revenue is equal to $[-(i) + (ii) - (iii)]$. For Year 1, this is \$3. The present value of \$3 assuming a 5 percent interest rate discounted for one year is \$2.86.⁶⁹

At the beginning of Year 2, ANR is negative \$3.00. Interest of $-\$.15$ is “earned” on this amount (5 percent of $-\$3$). This is the value of (i) for Year 2 ($-\$3.15$). The value of (ii) is given to be \$51 and the value of (iii) is given to be \$60. Thus, negative ANR for Year 2 is equal to \$12.15 (i.e., $[-\$3.15 + \$51.00 - \$60.00]$). The present value of $[-\$12.15]$ assuming a 5 percent interest rate discounted for two years is $[-\$11.02]$.⁷⁰

COMPUTING MARGINS FOR THE ANR CALCULATION

Item (ii) of the Accumulated Net Revenue formula consists of the margins generated during the year. This is a four step process:

- The first step is to project forward the account value at the prescribed rates in Appendix 3 of AG43 for this purpose, less asset fees.
- The second step is to reduce the projected values for lapses, elections of guaranteed living benefits, and mortality.
- The third step is to apply prescribed factors against the resulting account values to determine the assumed margins.
- The fourth step is to accumulate these margins at the interest rate for annuities using DR to the end of the projection year.

As noted, the first step in determining the margins generated in a year is to project forward the account value at prescribed rates.⁷¹ An initial drop is applied to the assets according to a schedule that is based on four different asset classes: equity, bond, balanced and fixed accounts.⁷² After the initial drop, the account values for the equity, bond and balanced accounts are projected forward at defined earnings rates reduced by “all fund and contract charges according to the provisions of the funds and contract.”⁷³ The fixed fund rate is for any fixed Separate Account or General Account assets and is applied as if it were the resulting net rate after deduction for fund and contract charges.⁷⁴ The fixed fund rate is the greater of the minimum rate guaranteed in the contract or 4 percent but not greater than the current rates being credited to Fixed Funds on the valuation date.⁷⁵

Although the Standard Scenario guidance generally does not provide specific instructions as to the classification of funds to these different asset classes, one approach is to use the guidance offered by AG34.⁷⁶ The Standard Scenario language does stipulate, however, that money market funds are considered part of the bond class.⁷⁷ The specified returns for the initial drop are net rates while the rates specified to project account values for equity, bond and balanced classes are gross rates. These gross rates are reduced for fund and contract charges according to the provisions of the funds and contracts.⁷⁸ The Fixed Funds rate is applied as if it were the resulting net rate after deduction for fund or contract charges.⁷⁹

The values for the initial asset drops and the gross return assumptions for subsequent years on assets supporting the account value are shown in Table II below, as follows:⁸⁰

Table II
Return Assumptions

	Initial	Year 1	Years 2-5	Year 6+
Equity Class	-13.5%	0%	4.00%	5.50%
Bond Class	0	0	4.85	4.85
Balanced Class	-8.1	0	4.34	5.24
Fixed Separate Accounts and General Account (net)	0	Fixed Fund Rate	Fixed Fund Rate	Fixed Fund Rate

If an interest index is required to determine projected benefits or reinsurance obligations, the index must assume interest rates have not changed since the last reported rates before the valuation date. If an equity index is required, the index must be consistent with the last reported index before the valuation date.⁸¹

The second step in computing margins, once the projected account values are determined, is to reduce the projected values for lapses, elections of guaranteed living benefits and mortality. The factors used to determine lapses and GLB elections are prescribed by the guideline and are described below. Mortality rates are specified as 70 percent of the 1994 Variable Annuity MGDB Mortality Tables (1994 MGDB tables) through age 85 increasing by 1 percent each year to 100 percent of the 1994 MGDB tables at age 115.⁸² No partial withdrawals—including free partial withdrawals—are used to reduce the projected account values (other than withdrawals made for GLBs or required contractually, such as a contract operating under an automatic withdrawal provision).⁸³ All lapses are treated as full surrenders.⁸⁴

The third step in computing margins is to apply the margin factors against the projected account values (the projected account values from Table V on pages 18 and 19).⁸⁵ The factors used to determine the margins vary depending on whether the margins are valued during the Surrender Charge Amortization Period (SCAP), defined below, or after the SCAP.⁸⁶

The margins on the account values during the SCAP are equal to those in Table III below:⁸⁷

Table III
Margins

- (i) 0.20 percent of account value; plus
- (ii) Any Net Revenue Sharing that is contractually guaranteed to the insurer; plus
- (iii) For all of the guaranteed living benefits of a contract, the greater of a) 0.20 percent of the account value or b) the explicit and optional contract charges for guaranteed living benefits; plus
- (iv) For all guaranteed death benefits of a given contract, the greater of a) 0.20 percent of the account value or b) the explicit and optional charges for guaranteed death benefits.

The margins on the account values after the SCAP are equal to:⁸⁸

- The amount determined for the margins during the SCAP; plus

- 50 percent of the excess, if any, of all contract charges (excluding Net Revenue Sharing Income) over the sum of (i) and (iii) above.

For fixed funds after the SCAP, a margin of up to the amount determined for margins during the SCAP plus .4 percent may be used.⁸⁹

LAPSE RATES IN THE ANR CALCULATION

The specified lapse rates depend on five factors:⁹⁰

- Whether the contract is in the surrender charge period;
- Whether any GMAB is in-the-money (ITM);
- Whether any other GLBs are ITM or out-of-the-money (OTM);
- Whether the contract has GMDBs only; and
- The percentage ITM of the fund.

All lapse rates are treated as full contract surrenders.⁹¹ This means that the projection for a contract assumes no partial surrenders (that is, partial withdrawals) other than those withdrawals that are required for the election of GLBs.⁹² Because of the probability of prior deaths, elections of GLBs and lapses, future years in the projection will reflect less than a full unit of the contract account value as if no lapses, elections or deaths had occurred. This does not mean that a “coin should be flipped” to decide if the entire contract terminates or persists but, rather, lapses would be reflected decrementally in the survivorship probability of a contract at a particular duration.⁹³

TABLE IV
Lapse Assumptions⁹⁴

	During Surrender Charge Period		After Surrender Charge Period		
			ITM<10%	10%≤ITM<20%	ITM≥20%
Death Benefit Only Contracts	5%				
All Guaranteed Living Benefits OTM	5%				
Any Guaranteed Minimum Accumulation Benefit ITM	2%	2%	0%		0%
Any Other Guaranteed Living Benefits ITM	3%	7%	5%		2%

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Whether a contract is ITM for a GMDB is irrelevant for the purpose of determining death rates, inasmuch as death is a nonelective benefit.

ELECTION RATES IN THE ANR CALCULATION

As with lapse rates, the specified election rates for GLBs are also prescribed and depend on whether and to what extent a contract is ITM.⁹⁵ Unlike AG33, which requires that for elective benefits an election rate that causes the highest reserve to be held must be assumed (usually 100 percent or zero), contractholder election rates for all GLBs other than GMWBs are prescribed to be:⁹⁶

- 5 percent annually if the living benefit for an interval is less than 10 percent ITM;
- 15 percent annually if the living benefit for an interval is 10 percent or more ITM and less than 20 percent ITM;
- 25 percent annually if the living benefit for an interval is more than 20 percent ITM.

In addition, the election rate for an ITM GLB is 100 percent at the last model duration to be able to elect the benefit.⁹⁷ However, if the contract has another GLB, the election rate for the first benefit is zero if the election would terminate the more valuable benefit.⁹⁸ For example, assume that a contract has two GLBs that are both ITM. Benefit A is first available at age 60 and Benefit B is first available at age 70. The contract holder is 65. Benefit B guarantees a higher benefit⁹⁹ than Benefit A. The election rate at age 65 for Benefit A should be zero since it would terminate the more valuable Benefit B even though B is not yet available to be exercised.¹⁰⁰

CALCULATION OF THE SURRENDER CHARGE AMORTIZATION PERIOD

A separate SCAP is determined for each contract and for each valuation date, based on amounts determined in the calculation of the Basic Adjusted Reserve (BAR) for that contract. A key component of the calculation is the amount of the surrender charge that is not amortized in the BAR calculation for that contract. This is represented by the difference between the account value and the cash surrender value projected within the BAR for the contract, for the future anniversary used in the BAR calculation (*i.e.*, the future anniversary for which the present value of benefits is greatest).¹⁰¹

The SCAP for a contract is computed by the following steps:¹⁰²

- Step 1. Determine the “BAR Duration.” The “BAR Duration” is the length of time between the valuation date and the projected greatest present value of the benefits measured by the BAR. For example, if the greatest present value of the benefits measured by the BAR is at the end of contract Year 4 and the valuation date is the second policy year, the BAR Duration is 2 years.
- Step 2. The surrender charge not amortized in the BAR is the surrender charge that applies at the time of the greatest present value of the benefits measured by the BAR Duration. For illustration purposes, if at the end of Year 2 the greatest present value is at the end of contract Year 4, the surrender charge not amortized is equal to \$20 (the surrender charge is 2 percent of the \$1000 initial premium). This amount cannot be less than zero.
- Step 3. The SCAP is equal to: The ratio of the amount determined in Step 2 to the account value on the valuation date times 100, plus the BAR Duration. For example, if the account value is \$917.54 at the valuation date at the end of the fourth year, the ratio is equal to $(20/917.54) \times (100) = 2.2$. Thus the SCAP equals 4 years $(2.2 + 2, \text{rounded to the nearest year})$.¹⁰³

DETERMINATION OF THE VALUE OF BENEFITS IN EXCESS OF ACCOUNT VALUES APPLIED, AND INDIVIDUAL REINSURANCE

As indicated above, the third value used in the determination of ANR is equal to the contract benefits in excess of account values applied and plus or minus individual reinsurance premiums and benefits on reinsurance of GMDBs and GLBs.

AG43 does not specifically describe how to determine the value of contract benefits in excess of account values. This value roughly conforms to the notion of the “A-Stream” in AG34 for GMDBs but takes into account GLBs, as well. As Table V indicates, this amount should be computed by using the projected account value and then applying the amount of guaranteed death benefits or present value of GLBs in excess of the projected account value that would be payable if the policyholder died or elected, respectively. The calculation approach for the A-Stream is illustrated in Chapter 16 of *U.S. TAX RESERVES for LIFE INSURERS*.¹⁰⁴

Individual reinsurance premiums and benefits on reinsurance of GMDBs and GLBs also reduce or increase ANR. The reinsurance premiums and benefits are accumulated during the projection year at DR to the end of the projection year. Only individual reinsurance is included in the projection of ANR.¹⁰⁵ Aggregate Reinsurance is not included.¹⁰⁶ Individual reinsurance is defined as reinsurance where the total premiums and benefits of the reinsurance can be determined by applying the terms of the reinsurance to each annuity contract covered without reference to the premiums or benefits of any other contract covered.¹⁰⁷

Projected reinsurance premiums must reflect all treaty limitations and must assume that any options in the treaty available to the other party are exercised to decrease the value of reinsurance to the reporting company (e.g., options to increase premiums or terminate coverage). The positive value of any reinsurance treaty that is not guaranteed to the insurer is excluded. Additionally, reinsurance is not taken into account if the reinsurance does not meet the statutory requirements that would allow the treaty to be accounted for as reinsurance.¹⁰⁸ Finally, reinsurance is also excluded if the terms of the reinsurance treaty serve solely to reduce the SSR without also reducing the risk on scenarios similar to those used to determine the CTE Amount.¹⁰⁹

Although the SSR is generally reduced for reinsurance ceded or increased for reinsurance assumed, AG43 recognizes that statutory reserves must be computed on a direct basis prior to the reflection of reinsurance ceded and that a reserve credit be taken against the direct reserve. In order to meet this accounting requirement, a reserve before reinsurance is calculated for each contract in order to show the reserve gross before reinsurance ceded.¹¹⁰ However, this is not required for reinsurance assumed. Similar adjustments should be made for tax purposes.

TAX ISSUES WITH RESPECT TO THE ACCUMULATED NET REVENUE CALCULATIONS

One potential issue is with respect to the use of assumptions above and beyond interest and mortality, e.g., lapse rates and elections of guaranteed living benefits, to determine the projected account values. That should not have any adverse impact to treatment as life insurance reserves. Additionally, having determined the projected account values, prescribed

factors are applied against these projected account values to determine the amount of margins, which are in turn used to compute the ANR. Applying those prescribed factors to the account values as so determined likewise should not result in tax issues any more than applying lapse and other factors to determine the projected account values.

In *Mutual Benefit Life Insurance Company v. Commissioner*,¹¹¹ the Service argued that the reserve established under a life insurance contract for the election of an annuity settlement option at death could not constitute a life insurance reserve because the reserve was not computed solely by the use of a mortality table and interest. The court rejected the argument. The Third Circuit stated:¹¹²

The fact that the computation for the reserve included elements other than mortality tables and assumed rates of interest, is not sufficient to disqualify the “additional reserves.” There is nothing in the statute which states that these two elements are the only factors which are permissible and that all others must be excluded. In the factual context present here, we can perceive no considerations which would require us to adopt a construction of the Act so narrow as to mandate the exclusion of circumstances which would tend to make the calculation of the reserve more exact.

As the Tax Court stated in *Phoenix Mutual Life Insurance Co. v. Commissioner*,¹¹³ “Mutual Benefit also stands for the proposition that “nonmortality” factors (in Mutual Benefit, factors concerning benefit election by the beneficiaries) may be taken into account in attempting to make a reserve calculation more exact.”

*Lincoln National Life Insurance Co. v. United States*¹¹⁴ dealt not only with an option reserve but also a term conversion reserve. In computing the amount of the reserve, the company used its own experience to determine the rates of conversion for the policies containing conversion privileges. The company also took into account lapse rates and mortality experience anticipated on the conversion policies on the basis of its experience on this class of policy. The Service argued that the reserves were not life insurance reserves because factors other than mortality and interest had been used. The court rejected the Service position, citing *Mutual Benefit*, and held that the use of nonmortality factors to make the reserve calculation more exact did not disqualify the reserve.

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*Equitable Life Insurance Co. of Iowa v. Commissioner*¹¹⁵ also held that use of lapse rates and election rates applied to settlement options under a life insurance contract did not disqualify the reserve for the settlement option as a life insurance reserve. The addition of guaranteed insurability options and term conversion reserves as supplemental benefits in section 807(e)(3)(D) implicitly adopts the reasoning of these cases, and there should not be any doubt that such factors can be considered in calculating life insurance reserves.

In *USAA Life Insurance Co. v. Commissioner*,¹¹⁶ the Tax Court held that multiplying the net level reserve by the “r” factor in calculating a universal life reserve would not disqualify the reserve from life insurance reserve treatment. In *Delta Life Ins. Co. v. United States*,¹¹⁷ the taxpayer issued funeral policies under which at the death of the insured the beneficiary had the choice of receiving either a benefit in kind in the form of a funeral or a certain percentage of the face amount of the policy as a cash benefit. The Service argument, although not clear, appears to be that the use of the word “involving” life, etc. contingencies in the definition of a life insurance reserve meant only that mortality or morbidity contingencies could be considered. The court rejected the Service’s argument, noting that insurance policies had always offered different options.¹¹⁸

The use of other factors should be broadly construed. For example, in *USAA Life Insurance Co. v. Commissioner*,¹¹⁹ the cash surrender value of the policies was \$9.15 million and the net level premium reserve was \$9.4 million. The Tax Court in its initial opinion held that the cash surrender value was a life insurance reserve.¹²⁰ The difference between the cash surrender value and the net level premium reserve was the result of the unamortized portion of the \$50 front-end expense charge. The court stated that the systematic derivation of the \$255,000 amount “does not impair the direct link between the aggregate cash surrender value and the recognized mortality tables and assumed interest rates of the net level reserve.”

Although the Fifth Circuit implied in reversing the Tax Court,¹²¹ and the Tax Court subsequently held,¹²² that the cash value was not a life insurance reserve because the cash value was simply an accumulated fund that was not calculated with interest rates and mortality, the initial case strongly supports the conclusion that if a reserve is in fact calculated using mortality and interest, then adding or subtracting an amount from the calculated reserve does not disqualify the reserve as a life insurance reserve because there is a “direct link” between the two amounts.¹²³

A second potential issue is whether in computing life insurance reserves for tax purposes, the asset drops in AG43 may be used to project future guaranteed benefits. It seems clear that because the initial asset drops and the subsequent gross assumed returns are prescribed in the Standard Scenario language, these rates should likewise be used for tax purposes. Apparently, the Service has taken the position that the projected asset drop is merely an investment risk and thus should not be included in the calculation of the reserve. In TAM 8111079, the Service took the position that, to the extent that no current GMDB existed in a variable life policy absent the assumption of a one-third depreciation of assets, there were no future unaccrued claims for which a reserve could be held.¹²⁴ Therefore, the portion of the GMDB reserve attributable to the one-third depreciation would not be considered a life insurance reserve. When the GMDB base amount exceeded the benefit which would be payable without it (absent any assumed immediate asset depreciation), however, the one-year term GMDB reserve on this difference was allowed as a life insurance reserve.¹²⁵

It might be argued that TAM 8111079 does not apply under the 1984 Act because the 1984 Act allows the use of the market value of the supporting assets to be treated as an assumed interest rate to compute reserves under variable life insurance, while such treatment was not allowed under the 1959 Act. It may also be of some note that the Service did not argue in TAM 200448046 that statutory reserves for GMDBs on its variable annuities using the statutory requirements in Connecticut (*i.e.*, that there was an assumed immediate one-third drop in asset value) did not qualify as life insurance reserves. The Service concluded only that Connecticut’s required asset drop was not the prevailing state practice or interpretation of CARVM, and, therefore, could not be used for section 807(d) purposes. Moreover, unlike AG43, the simple one-third asset drop at issue in the TAM does not assume any subsequent recovery in the asset’s values and thus could be viewed as inconsistent with CARVM or CRVM, which requires a projection of future values. Additionally, Rev. Rul. 2007-54 permits a deduction for the GMDB, presumably computed using the asset drop in AG34, albeit without any analysis.¹²⁶

Regardless of the Service treatment of asset drops under the 1959 Act, the 1984 Act in section 807 specifically requires the use of the NAIC prescribed reserve method. This requirement implies reserves are allowed for guaranteed benefits assuming an immediate asset drop for tax purposes since they are

required by the method of computing them specified by the NAIC. Most importantly, the prescribed method including the asset drop determines the unaccrued future benefits to be used in valuation. The requirement for using an assumption of an immediate asset drop in value is only a way of defining certain future benefits which, although not currently in existence, are to be used in valuation. While these are only potential future benefits—rather than those that actually exist at valuation—this is not different than the use of an assumed yield on assets to project forward the fund in the case of variable products to determine benefits in calculating reserves under CARVM.

Indeed, the difficulty in applying CARVM to variable annuities arises from the fact that CARVM requires the account value to be projected forward to determine the benefits under the contract, and there is no guaranteed interest rate that can be used to project the account value forward.¹²⁷ The Model Variable Annuity Regulation provides that the reserve liability for variable annuities must be established pursuant to the requirements of the Standard Valuation Law in accordance with actuarial procedures that recognize the variable nature of the benefits provided and for any mortality guarantees.¹²⁸ The language in the Model Regulation is essentially repeated in the NAIC Accounting Practices and Procedures Manual.¹²⁹ The Standard Valuation Law does not specifically address the calculation of variable annuity reserves.¹³⁰

In the case of CARVM, all future possible benefits (surrenders, deaths prior to annuitization and annuity payments) are valued on a “greatest of present values” basis. All benefits being valued are to some degree contingent on occurrences besides mortality or morbidity. In effect, the only new assumption is one of Separate Account performance. Indeed, assumed market assumptions are needed to determine all future benefits, including projected surrender values and annuitization options, under variable contracts regardless of the existence of any minimum guaranteed benefits. In particular, in calculating the AG43 reserve, the reserve is equal to the greatest present value of benefits under the contract. In most situations, the greatest present value occurs at a period of time in which the accumulated fund value is positive, notwithstanding any asset drop at time zero (and time zero is ignored in the calculation of the reserve).

Finally, an argument can be made in support for this position by relying on those cases that held that a reserve for an annuity settlement option at death is a life insurance reserve. The

Service had argued that the reserve could not constitute a life insurance reserve because the reserve was established for a new contract with the beneficiary, and the new contract did not exist until elected by the beneficiary. That is, the settlement option was not an existing contract within the meaning of what is now section 816(b)(1)(B) until the option was elected.¹³¹ The cases uniformly held that the option is part of the existing contract.¹³² These cases provide support for an argument that the benefit for which the company holds a reserve does not need to be currently in effect at the time the reserve is established.

As a third potential issue, it seems clear to us that the asset drop in GMDB or GLB is not an “investment loss reserve,” if for no other reason than that the NAIC has established another liability that takes into account risks that are solely investment risks and unconnected with policyholder liabilities. The NAIC has established a reserve for potential credit-related and interest-related investment losses on most invested assets through an Asset Valuation Reserve (AVR).¹³³ The calculation of the AVR is completely unconnected with the policyholder liability risks that the company has taken on. If the asset drop in Guideline 43 were meant to measure investment risk alone, it would be redundant with the AVR.

Furthermore, the Actuarial Opinion and Memorandum Regulation (AOMR) requires a company to provide for an Actuarial Opinion regarding, among other things, the adequacy of the reserves and related actuarial items (policy liabilities) based on an asset adequacy reserve (AAR) test. This rule was largely adopted in the NAIC Accounting Practices and Procedures Manual in Appendix A-822. The AAR is a life insurance reserve as that term is defined for NAIC accounting purposes (whether or not it meets the definition of a life insurance reserve for purposes of section 816), although the AAR includes as one of its components a provision for GMDBs and GLBs. This asset adequacy analysis may take many forms, including, but not limited to, cash flow testing, sensitivity testing or applications of risk theory. If as a result of asset adequacy analysis a reserve should be held in addition to the aggregate reserve held by the company and calculated in accordance with the Standard Valuation Law, the company must hold an additional reserve. Thus, the AAR, as a statutory reserve, provides a test to determine whether assets supporting the AG43 reserve are sufficient to provide for policyholder liabilities.

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A fourth potential tax issue that arises is in the calculation of the SCAP. Initially, it should be pointed out, however, that the BAR Duration is based on the length of time between the valuation date and the projected greatest present value of the benefits measured by the Basic Adjusted Reserve. Since the present value of the benefits must use tax basis interest and mortality assumptions rather than statutory assumptions, this could cause a difference in the BAR Duration between tax and statutory reserves.

The SCAP will change by the passage of time, the actual decrements that take place, and the actual account value as it changes from valuation date to valuation date. The change of the SCAP should not be a section 807(f) event. Section 807(f) provides that “if the basis for determining any [reserve] item ... as of the close of any taxable year differs from the basis for such determination as of the close of the preceding taxable year” the difference is spread over 10 years. Three arguments support the conclusion that section 807(f) does not apply. First, any change in the SCAP is simply part of the method of computing the reserve rather than a change in assumptions used in computing the reserve, and section 807(f) applies only when the reserve method is changed or actuarial assumptions used to compute the reserve are changed. Second, section 1.801-7(b) makes it clear that section 807(f) does not apply to a change in the rate of interest assumed by a company in calculating reserves on a variable annuity contract. The purpose of this rule is to prevent market value changes from causing any section 807(f) adjustments. To the extent market value changes are creating the change in the SCAP, it is consistent with the rule in section 1.801-7(b) for Section 807(f) not to apply here. Third, to the extent that the market value change causes the period to change, this could fit within the scope of a change in fact rather than a change in assumption.

EXAMPLE OF PROJECTED ACCOUNT VALUES FOR PURPOSES OF THE ACCUMULATED NET REVENUE CALCULATIONS

The example assumes a variable annuity is issued with a GMAB. The account value at the valuation date is \$1,000. There are contract fees of 150 basis points. Surrender charges are assumed to be the following percentages of the lower of the premiums paid or the account value. The ITM percentages are assumed for purposes of this example. Mortality rates are 70 percent of the 94 MGDB Mortality Tables (expressed as mortality per 1,000). The GMIB election rates are based on

the amount in-the-money. For this purpose, the ITM percentages are based on the gross account values compared to an assumed present value at GMIB election date of the minimum guaranteed benefit of \$1,250. For example, at the end of time 1, the projected gross account value is \$852.03. Thus, the ITM percentage is equal to $1 - (852.03/1,250)$.

The account values are projected forward based on investment assumptions less contract charges. The projected values are then reduced for lapses, elections of living benefits, and mortality to determine the projected account value. At the valuation date, the \$1,000 account value is assumed to be invested in an equity account.

**TABLE V
Illustrative Projected Account Value**

Part 1: Assumptions

Male Age 60

End of Period	Surrender Charge
1	5%
2	4%
3	3%
4	2%
5	1%
6	0%

Time	Assumed Lapse Rates	70% 94 MGDB Deaths per 1000	GMAB Election Rates	ITM Percent
0				
1	2.00%	7.02	25.00%	31.84%
2	2.00%	7.91	25.00%	30.13%
3	2.00%	8.95	25.00%	28.39%
4	2.00%	10.10	25.00%	26.60%
5	2.00%	11.37	25.00%	24.76%
6	0.00%	12.73	25.00%	21.75%
7	0.00%	14.18	15.00%	18.62%
8	0.00%	15.68	15.00%	15.37%
9	0.00%	17.21	15.00%	11.98%
10	0.00%	18.81	05.00%	8.46%

Part 2: Values

Illustration of Projected Account Values in Portfolio (Assume Equity Class)

Period	Att Age Beg. of Pd (BP)	(1) Projected Account Value (BP)	(2) Gross Assumed Return	(3) Asset Fee Pct	(4) Net Assumed Return	(5) Resultant Account Value (BP)	(6) ITM PCT (BP) (GMAB)	(7) Lapse Rates	(8) Post-Anniv. Surrender Charge in Pd
1	60	1,000.00	-13.50%	1.50%	-15.00%	865.00	0.00%	2%	5%
2	61	616.00	4.00%	1.50%	2.50%	616.00	30.80%	2%	4%
3	62	455.92	4.00%	1.50%	2.50%	455.92	31.49%	2%	3%
4	63	336.96	4.00%	1.50%	2.50%	336.96	29.44%	2%	2%
5	64	248.64	4.00%	1.50%	2.50%	248.64	27.32%	2%	1%
6	65	183.15	5.50%	1.50%	4.00%	183.15	25.14%	0%	0%
7	66	140.43	5.50%	1.50%	4.00%	140.43	22.89%	0%	0%
8	67	107.46	5.50%	1.50%	4.00%	107.46	20.19%	0%	0%
9	68	82.07	5.50%	1.50%	4.00%	82.07	17.40%	0%	0%
10	69	71.08	5.50%	1.50%	4.00%	71.08	14.51%	0%	0%

Period	Att Age Beg. of Pd (BP)	(9) 70% of 1994 MGDB q(x) per 1000	(10) GMAB Election Rate	(11) Lapses	(12) Deaths	(13) elections	(14) End of Pd Projected Acct Val	(15) End of Pd Gross Acct Val
1	60	7.0203	25%	17.04	5.98	213.01	616.00	852.03
2	61	7.9184	25%	12.63	5.00	157.85	455.92	873.33
3	62	8.9467	25%	9.35	4.18	116.83	336.96	895.16
4	63	10.1017	25%	6.91	3.49	86.35	248.64	917.54
5	64	11.3687	25%	5.10	2.90	63.71	183.15	940.48
6	65	12.7337	25%	-	2.43	47.62	140.43	978.10
7	66	14.1813	25%	-	2.07	36.51	107.46	1,017.22
8	67	15.6786	25%	-	1.75	27.94	82.07	1,057.91
9	68	17.2067	15%	-	1.47	12.80	71.08	1,100.22
10	69	18.8083	15%	-	1.39	11.09	61.45	1,144.23

Legend

Column Description

- (1) In Period 1, 1000. For Period>1, equals Col (14), prior Period.
- (2) From Table I, AG43 (page 24).
- (3) Given.
- (4) Col (2) – Col (3).
- (5) In Period 1, Col (1)*(1 – Col (2)). That is, immediate drop. Zero subsequent gross return in period, and -1.5% net return in period. For Period>1, equals Col (1). That is, no immediate drop.
- (6) Given.
- (7) From Table II, AG43 (page 26).
- (8) Given.
- (9) 70% of AG43, Appendix 11, Male - Age Last Birthday (page 74).
- (10) From AG43, Appendix 3, Section A.3.3, C)7) (page 27).
- (11) In Period 1, (5)_t*(1-(3))_t*(7). For Period>1, (5)_t*(1+(4))_t*(7).
- (12) In Period 1, (5)_t*(1-(3))_t*(9)/1000. For Period>1, (5)_t*(1+(4))_t*(9)/1000.
- (13) In Period 1, (5)_t*(1-(3))_t*(10). For Period>1, (5)_t*(1+(4))_t*(10).
- (14) In Period 1, [Col (5)* [1-Col(3)]-Col(11)-Col(12)-Col(13)]. For Period>1, Col (5)* [1+Col(4)]-Col(11)-Col(12)-Col(13).
- (15) In Period 1, (1)_t*(1+(2))_t*(1-(3))_t. For Period>1, (15)_{t-1}*(1+(4))_t.

CONTINUED ON **PAGE 20**

The Gross Account Value column is the value of the account assuming no lapses, deaths or GMAB elections and grown at the equity return rate (“Sales Illustration Style”). The equity return rates are derived from the prescribed investment returns for an equity account with an assumed 150 basis points in asset charges. At time zero, there is an assumed 13.5 percent drop in the value of assets to \$865. During Year 1, the gross return is 0 percent and the net return is -1.5 percent as the result of the 150 basis points asset charges.

At the end of Year 1, the projected account value is \$616. This is determined by taking the starting value at the beginning of time one (*i.e.*, immediately after the 13.5 percent drop) of \$865. The gross projected investment return for period one is 0 percent and is a net 1.5 percent loss after taking into account contract charges. Thus, before any lapses, elections or deaths, the account value at the end of time 1 is \$852.03. Of this \$852.03 account value, 2 percent is assumed to lapse ($\$17.04 = 2 \text{ percent of } \852.03), 7.02 per 1000 are assumed to die ($\$5.98 = .00702 \times \852.03), and 25 percent is assumed to be withdrawn because the contract holder elected the GMAB ($\$213.01 = 25 \text{ percent} \times \852.03). This results in an account value at the end of the year of \$616.

REDUCTION FOR VALUE OF APPROVED HEDGES AND AGGREGATE REINSURANCE

As indicated above, the third calculation used to determine Accumulated Net Revenue (ANR) is to reduce the sum of the BAR and the “negative of the lowest present value of ANR” (NLPVANR) by the value of Aggregate Reinsurance and the value of hedges.¹³⁴ This reduction is essentially a standalone calculation once the values of BAR and NLPVANR are determined, and can be treated as a separate subject in this paper. As noted above, Aggregate Reinsurance is reinsurance where the total premiums and benefits of the reinsurance cannot be determined by applying the terms of the reinsurance to each contract covered without reference to the premiums or benefits of any other contract.¹³⁵

Each of these values is calculated separately from the ANR.¹³⁶ Because these values are determined in aggregate, they must be allocated down to the individual contract level.¹³⁷ A contract’s allocation of the value of approved hedges and value of Aggregate Reinsurance is equal to the lesser of:¹³⁸

- (i) The NLPVANR
- (ii) The product of (a) and (b) where: (a) is the sum of the value of approved hedges plus the value of the

Aggregate Reinsurance for all contracts supported by the same hedges or reinsurance agreement (VALHR); and (b) is the ratio of the contract’s NLPVANR defined in (i), above, to the sum of such amounts for all contracts supported by the same hedges or reinsurance agreement.

The effect of this allocation method is to allocate VALHR by the ratio of the NLPVANR for a contract to the sum of NLPVANR over all contracts, unless VALHR exceeds that sum. In such latter case, allocation method (i) is used over all contracts, so that the total VALHR over all contracts cannot be greater than the total NLPVANR over all contracts.

The value of Aggregate Reinsurance is the discounted value of the excess of (a) the projected benefit payments from the reinsurance; over (b) the projected gross reinsurance premiums, where (a) and (b) are determined under the return assumptions in assets supporting the account values for all contracts in aggregate.¹³⁹

Reinsurance may not be taken into account if the reinsurance does not meet the statutory requirements that would allow the treaty to be accounted for as reinsurance.¹⁴⁰ Projected reinsurance premiums and benefits must reflect all treaty limitations and must assume any options in the treaty to the other party are exercised to decrease the value of reinsurance to the reporting company (*e.g.*, options to increase premiums or terminate coverage). The positive value of any reinsurance treaty that is not guaranteed to the insurer or its successor must be excluded from the value of reinsurance.¹⁴¹ Reinsurance is also ignored if the terms of the reinsurance treaty serve solely to reduce the Standard Scenario Reserve without also reducing the risk on scenarios similar to those used to determine the Conditional Tail Expectation Reserve.¹⁴²

Conceptually, the items being hedged (GMDBs and GLBs) and the approved hedges are accounted for at the average present value of the worst 30 percent of all scenarios, which is the tail scenario for a CTE(70) measure. However, the statement value of approved hedges is at market. Therefore, the Standard Scenario value of approved hedges is a proxy of the adjustment needed to move approved hedges from a market value to a tail value.¹⁴³ There is no credit in the Standard Scenario for dynamic hedging beyond the credit that results from hedges actually held on the valuation date.¹⁴⁴ There is also no credit for hedges that are not approved hedges.

The value of approved hedges is the difference between: (a) the discounted value as of the valuation date of the pretax cash flows from the hedges; less (b) their statement values on the valuation date.¹⁴⁵ The discounted value of the pretax cash flows is determined using the 1-year CMT.¹⁴⁶ Under the SSA rules regarding hedges, to be an approved hedge, a derivative or other investment has to be an actual asset held by the company on the valuation date, be used as a hedge supporting the contracts falling under the scope of the guideline, and comply with any rules (including documentation requirements) related to the use of derivative instruments.¹⁴⁷

In order for the value of the Aggregate Reinsurance to be consistent with the underlying SSR, the discount rate is a weighted average of the valuation rates of the contracts that are supported by the treaty. The weights used to determine this discount rate must be reasonably related to the risks covered by the treaty (e.g., account values or values of guaranteed benefits) and must be applied consistently from year to year. If an appropriate method to determine the discount rate does not exist, the value of the Aggregate Reinsurance is determined using the statutory valuation rate in effect on the valuation date for annuities valued on an issue year basis using Plan Type A and a Guarantee Duration greater than 10 years but not more than 20 years, determined assuming there are cash settlement options but no interest guarantees on future premiums.

The cash flow projection for hedges that expire in less than one year from the valuation date should be based on holding the hedges to their expiration.¹⁴⁸ The pretax cash flows from the hedges should be based on the assumed returns in the Standard Scenario from the start of the projection to the expiration date. Thus, the cash flows should assume the asset drops and recoveries used to determine the margins in calculating Accumulated Net Revenue.

For hedges with an expiration of more than one year, the value of hedges should be based on liquidation of the hedges one year from the valuation date.¹⁴⁹ Where applicable, the liquidation value of hedges must be consistent with the assumed returns in the Standard Scenario from the start of the projection to the date of liquidation, Black-Scholes pricing, a risk-free rate equal to the 5-year CMT as of the valuation date and the annual volatility implicit as of the valuation date in the statement value of the hedges when the statement value of hedges is valued with Black-Scholes pricing and a risk-free rate equal to the 5-year CMT as of the valuation date.

For example, assume a company holds an American put option against an equity subaccount as of Dec. 31, 2009 that expires on March 1, 2010. The option was purchased on Dec. 1, 2009 for \$1 and gives the company the right to put the option at \$100. Assume the subaccount value on Dec. 31, 2009 is \$95. Thus, the current fair market value (and statement value) of the option is approximately \$5. To determine the value of the hedge, the subaccount assumes a 13.5 percent drop at the valuation date so that the account's value is projected to be \$82.17 at Jan. 1, 2010, and the account value is assumed to lose an additional value in the next two months of \$.15 to a projected value of \$82.02 (the assumed recovery for the next two months is equal to a gross return of zero less asset charges).

Based on these assumptions, the pretax cash flow from the hedge is about \$17.98 (i.e., \$100 - \$82.02). That is, if the account value is projected to be \$82.17 on March 1, 2010, the put will be exercised and the company will receive \$17.98. This \$17.98 is discounted at the 1-year CMT Rate and compared to the hedge's statement value of \$5. Assuming that the discounted value of the \$17.98 is \$17.70, the value of the hedge is \$12.70, which is the difference between the \$17.70 present value of the projected cash flow and the \$5 statement value of the put option.

As noted above, the conceptual basis for this value is that both the contract guarantees and the value of the approved hedges are accounted for as the average value of the worst 30 percent of all scenarios. Thus, where a guaranteed benefit is fully hedged, the increase in the contract reserve for the benefit should be roughly equivalent to the value of the hedge. Accordingly, although greatly oversimplified, and assuming there is only the one contract in the portfolio, the reserve deduction would be roughly offset by the value of the hedge.

TAX ISSUES WITH RESPECT TO THE VALUE OF APPROVED HEDGES AND AGGREGATE REINSURANCE

Although section 807(d) requires a seriatim calculation, reducing reserves by an allocated portion of the value of aggregate reinsurance should not create an issue as to whether the resulting reserve qualifies as a life insurance reserve for tax purposes. First, although the SSR is reduced for reinsurance ceded or increased for reinsurance assumed, AG43 recognizes that statutory reserves must be computed on a direct basis prior to the reflection of reinsurance ceded and that a re-

CONTINUED ON PAGE 22

serve credit is taken against the direct reserve. In order to meet this accounting requirement, a reserve before reinsurance is calculated for each contract in order to show the reserve gross before reinsurance ceded.¹⁵⁰ Thus, for tax purposes, the SSR is, at worst, the reserve computed without regard to reinsurance and then a reserve credit must be taken. A reduction for hedges should be treated in the same manner, although there is no particular statutory rule requiring the reserve to be computed gross before hedges.

Moreover, that an aggregate amount is used to reduce reserves and is allocated to a group of contracts is substantively no different than reducing reserves for nonproportional reinsurance arrangements. These reinsurance arrangements provide for financial protection for aggregate losses rather than providing indemnification on an individual policy basis. Usually the coverage does not extend over the life of the policy nor is there any obligation by the ceding company to renew the agreement.¹⁵¹ Reducing tax reserves by any reserve credits allowed for statutory purposes for nonproportional reinsurance is probably required for tax purposes.¹⁵²

For tax purposes, the higher of the 5-year CMT Rate and the AFR should be used to discount the pretax cash flows of approved hedges. One might argue that, because the CMT Interest Rate is not based on a statutory valuation interest rate defined under the Standard Valuation Law (that is, by Plan Type, guarantees, etc.), the rule that requires the higher of the PSAR and the AFR does not apply. However, it is simply the case here that the statutory valuation rate is defined by reference to the CMT. Thus, this argument is unlikely to prevail.

ALLOCATION OF THE STANDARD SCENARIO RESERVE BETWEEN THE GENERAL ACCOUNT AND SEPARATE ACCOUNT

As noted above, AG43 requires an allocation of the total reserve between the General Account and Separate Account and prescribes a method for doing this allocation.¹⁵³ This allocation is necessary in part to determine the amount of reserve held in the General Account with respect to guaranteed benefits that may exceed the amount of assets held in the Separate Account. AG43 prescribes the minimum amount of reserve that must be held in the General Account but it does not define the minimum amount of reserve that must be held in the Separate Account. Under the guideline, the amount of the reserve held in the General Account cannot be less than the excess of the Aggregate Reserve over the sum of the

Basic Reserves attributable to the variable portion of all such contracts.¹⁵⁴ As noted above, the Aggregate Reserve is the minimum reserve requirement as of the valuation date. It is equal to the sum of the SSA plus the excess, if any, of the CTE Amount over the SSA.¹⁵⁵

Any reserve attributable to a fixed subaccount is held in the General Account and thus would not be included in the Basic Reserve attributable to the variable portion of a contract. Thus, an allocation is also necessary to apportion the reserve between the fixed subaccount and any variable subaccounts but the guideline does not provide a method for apportioning the reserve. Presumably, one method would be to compute the Basic Reserve as if the Separate Account constituted the entire account value of the contract, and subtract that from the Aggregate Reserve for the contract, to obtain that portion of the reserve allocable to the General Account.

As indicated above, the SSR for a contract with guarantees is equal to the BAR + ANR, minus the value of Aggregate Reinsurance and hedges. The SSR can never be less than the cash surrender value.¹⁵⁶ The BAR is effectively the Basic Reserve that is calculated for contracts without GMDBs or VAGLBs, except that free partial withdrawal provisions are disregarded when determining surrender charges, and that the BAR is not subject to the net surrender value floor. The Basic Reserve, on the other hand, cannot be less than the net surrender value of the contract.

Assume that the SSA exceeds the CTE Amount. Further assume the following, and that the contract is invested fully in the Separate Account:

Basic Reserve	Standard Scenario Reserve	Cash Surrender Value
\$97	\$100	\$95

The General Account portion of the reserve for the contract cannot be less than the excess of the SSR over the Basic Reserve. It is clear that, at a *minimum*, \$3 must be held in the General Account but it is not clear whether, for example, the amount of the reserve held in the General Account could be more than the minimum. Note that the Basic Reserve can never be less than the net surrender value for a contract.

Now suppose that the Aggregate Reserve is determined by the CTE Amount (\$230). Assume the following, including that both contracts are fully invested in the Separate Account:

	Basic Reserve	Standard Scenario Reserve
Contract A	\$100	\$105
Contract B	\$110	\$110
Total	\$210	\$215

The minimum reserve that must be held in the General Account is \$20 (\$230 minus the sum of the Basic Reserves of \$210).

The allocation should not have any tax consequences in the total tax reserve unless the statutory cap were to apply at the Separate Account/General Account level rather than at the contract level. The flush language in section 807(d)(1) stipulates, “In no event shall the reserve determined under the preceding sentence for any contract as of any time exceed the amount which would be taken into account with respect to such contract as of such time in determining statutory reserves (as defined in section 807(d)(6)).”¹⁵⁷ Thus, the better answer is that the statutory cap applies at the contract level. Indeed section 807(d)(1) is clear on this point, stating in pertinent part:

In no event shall the reserve determined under the preceding sentence for any contract as of any time exceed the amount which would be taken into account with respect to such contract as of such time in determining statutory reserves...” [Emphasis added]

ALLOCATION OF THE EXCESS OF THE CTE AMOUNT OVER THE SSA DOWN TO THE CONTRACT LEVEL

Appendix 6 of AG43 provides a method for allocating the excess, if any, of the stochastic reserve over the sum of the seriatim reserves to the contract level when the stochastic reserve method exceeds the sum of the seriatim reserves. Specifically, when the CTE Amount exceeds the SSA, and the reserve is computed using a single grouping, the excess of the CTE Amount over the SSA is allocated to each contract on the basis of the difference between the Standard Scenario Reserve for the contract over the cash surrender value on the valuation date of the contract. If the cash surrender value is not available, the SSA is the basis of allocation.¹⁵⁸ The allocation of the CTE

excess may have relevance in determining the statutory cap for a policy for tax purposes, even assuming the stochastic reserve itself is not allowed as a deductible reserve. If there is no CTE Excess, then of course no allocation is required since the SSA is already calculated on a contract-by-contract method.¹⁵⁹

When the CTE Amount is determined using subgroupings, the CTE Excess for each subgrouping is allocated over all the contracts in the subgrouping, to each subgrouping for which the CTE Excess is positive, as illustrated in the following example.¹⁶⁰ As an example, consider a company with the results of the following three subgroupings:¹⁶¹

	A	B	C	Total
CTE Amount	28.00	40.00	52.00	120.00
SSA	20.00	45.00	30.00	95.00
Aggregate Reserve				120.00
(1) – (2)	8.00	-5.00	22.00	25.00
Allocation	6.67	0	18.33	25.00

In this example, the CTE excess for the total of the subgroups equals 25 (120 – 95). This excess of 25 would be allocated only to those contracts that are part of subgroupings whose CTE Excesses are positive. In this example, this would be in contracts in subgroupings A and C (since for subgrouping B the CTE Excess is negative and forced to zero).

Therefore, the Aggregate Excess of 25 would be allocated to the contracts in subgroupings A and C in proportion to the difference between the CTE Excesses for subgroupings A and C only. In this example, the total CTE Excesses for subgroupings A and C equals 8 + 22, or 30. The ratio of the Aggregate Excess to the total CTE Excess (25/30) is applied to the original CTE Excesses in subgroups A and C. That process eliminates the “negative excesses” (subgroup B in this case) from the calculation, in order to bring the sum of the subgroup CTE Excesses equal to the Aggregate CTE Excess.

TAX ISSUES WITH RESPECT TO ALLOCATION OF THE CTE EXCESS

If the CTE Amount is not an allowable tax reserve deduction, there exists the issue of whether the CTE Amount, if it

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exceeds the SSR, should be included in the statutory cap. The 1984 Tax Act committee reports answer this question in the affirmative for deficiency reserves. Even though a deficiency reserve is not a deductible life insurance reserve,¹⁶² both the 1984 Blue Book and 1986 legislative history state that deficiency reserves are included in the statutory cap.¹⁶³ To the extent that the CTE Amount can be analogized to a deficiency reserve, the same answer should apply for tax purposes. The significant difference between the CTE Amount and the de-

fiency reserve issue is that the CTE Amount is an aggregate reserve amount that is allocated to contracts while the deficiency reserve is itself a seriatim calculation. However, just as Aggregate Reinsurance and hedges *reduce* statutory and tax reserves based on an allocation to individual contracts, so too the opposite should apply to the statutory cap, namely, the allocation should allow a company to use the allocated CTE Amount as part of the statutory cap. ◀

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END NOTES

- ¹ It is still an open issue whether the measurement point for the statutory change in basis is Dec. 31, 2009 as per the guideline or Jan. 1, 2009, as accounting guidance calls for all reserve basis changes to be effective as of the beginning of the year.
- ² AG43 Section V.
- ³ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.1.
- ⁴ AG43 Section III(A)2.
- ⁵ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.1.
- ⁶ AG43 Section I) Background notes that GMABs are types of guarantees offered in variable contracts but no definition is specifically provided for in the definition Section III of AG43.
- ⁷ A GMIB is a VAGLB design for which the benefit is contingent on annuitization of a variable deferred annuity contract. The benefit is typically expressed as a contract holder option, on one or more option dates, to have a minimum amount applied to provide periodic income using a specified purchase basis. AG43 Section III(A)3). See also AG43 Section I) Background.
- ⁸ See also AG43 Section I) Background, which notes that GMWBs and GLWBs are types of guarantees offered in variable contracts but no definition is provided in Section III.
- ⁹ A Guaranteed Payout Annuity Floor is a GLB design guaranteeing that one or more periodic payments under a variable immediate annuity will not be less than a minimum amount. AG43 Section III(A)4). See also AG43 Section I) Background.
- ¹⁰ AG43 Section III(A)2) (last sentence).
- ¹¹ AG43 Section IV(A).
- ¹² For variable deferred annuity contracts that contain either no guaranteed benefits or only GMDBs (including earnings enhanced death benefits), the CTE Amount may be determined by using an "Alternative Method" rather than by using the stochastic approach described above that is based on projections. However, if the projection (stochastic) method has been used in prior valuations, the company must obtain approval from the Domiciliary Commissioner to use the Alternative Method. AG43 Appendix 4(A.1)A).
- ¹³ AG43, Section I) Background.
- ¹⁴ AG43, Section I) Background.
- ¹⁵ The SGPV for a given scenario equals the starting asset amount plus the greatest present value of the projected accumulated deficiencies under that scenario's assumptions.
- ¹⁶ 418 U.S. 1 (1974).
- ¹⁷ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.1.
- ¹⁸ AG43 Section II(A)1).
- ¹⁹ AG43 Section II(A)2).
- ²⁰ AG43 Section II(A)3). For example, group annuities covering participants of 401(k) plans, but only if they also contain guaranteed living or death benefits.
- ²¹ AG43 Section II(A)4).
- ²² AG43 Section II(A)4) and footnote 5.
- ²³ AG43, Section II(A)4)a). See also "Practice Note for the Application of C-3 Phase II and VA CARVM" (Sept. 2005), Q&A 1.7. Applying the requirements on a "standalone basis" in the stochastic reserve calculation means that the projections required to calculate the CTE Amount for AG43 and the Total Asset Requirement for VA RBC should reflect only the revenues, benefit costs and expenses directly related to these benefits. Of course, the funds in which the premiums have been invested would usually also be projected, but only for purposes of determining the guaranteed benefits and to determine the excess, if any, of the guaranteed benefit over what would have been provided in the absence of the guarantee for purposes of calculating benefit costs. See Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.9.
- ²⁴ "Practice Note for the Application of C-3 Phase II and VA CARVM" (Sept. 2005), Q&A 1.6.
- ²⁵ AG43 Paragraph II) footnote 5. Similarly, footnote 2 to the VA RBC Scope states: "For example, a group life contract that wraps a GMDB around a mutual fund would generally fall under the scope of this requirement since there is not an explicit reserve requirement for this type of group life contract." See Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.6.
- ²⁶ AG43 Section II) footnote 5.
- ²⁷ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.10.
- ²⁸ AG43 Section II) footnote 4.
- ²⁹ AG43, Section II(B); Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.3.
- ³⁰ AG43, Section II(B); Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.3.
- ³¹ AG43 Section II(B); Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.3. It is unclear how to apply AG43 to a variable annuity with MGA subaccounts. One approach is to treat the contract as being a variable annuity with additional fixed accounts. Under this approach, the product would be covered under the first category of AG43 relating to variable deferred and immediate annuities. An alternative approach is to view the product as belonging to the fourth category which includes "all other products that contain guarantees similar in nature to GMDBs or VAGLBs" where there is no explicit reserve requirement for such guarantees. See AG43 Paragraph II(A)4); Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.4. In this event, Guideline 43 is applied to the benefit on a standalone basis. See AG43 Paragraph II(A)4)a); Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.4.

³² Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.2.

³³ AG43 Paragraph II), footnote 4.

³⁴ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.5.

³⁵ AG43 Section II(C) and Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 1.2.

³⁶ AG43 Appendix 3(A3.3(B)1).

³⁷ AG43 Appendix 3(A3.2(A)).

³⁸ AG33 requires that for elective benefits, every potential guaranteed elective benefit must be considered by considering trial sets of guaranteed elective benefit incidence rates to determine which trial set produces the greatest present value. AG33 does not require an actuary to actually test every conceivable integrated benefit stream. For some contracts, it may be possible to demonstrate that only a small number of integrated benefit streams must be considered. In other cases, an exact demonstration may not be possible and some judgment on the part of the actuary may be required.

³⁹ AG43 Appendix 3(A3.2(C)). The cash surrender value is defined as the amount available to the contract holder upon the surrender of the contract. Generally, it is equal to the account value less any applicable surrender charges, where the surrender charge reflects the availability of any free partial surrender options. For contracts where all or a portion of the amount available to the contract holder upon surrender is subject to a market value adjustment, however, the cash surrender value must reflect the market value adjustment consistent with the required treatment of the underlying assets. That is, the cash surrender value reflects any market value adjustments where the underlying assets are reported at market value, but does not reflect any market value adjustments where the underlying assets are reported at book value. AG43 Paragraph III(B)2).

⁴⁰ AG33, Paragraph 2.B and Paragraph 6.

⁴¹ AG13 provides generally that the value of guaranteed benefits under CARVM may be reduced by contingent surrender charges only if those surrender charges may be available upon surrender. If contingent surrender charges are taken into account, the cash value available to the policy owner is lower, resulting in generally lower reserves. By requiring the contingent surrender charges to be ignored, the cash value without reduction for the surrender charges must be used to determine the benefits available under the contract in the calculation of the reserve.

⁴² AG43 Appendix 3(A3.3(C)5).

⁴³ AG43 Appendix 3(A3.2(B)).

⁴⁴ AG43 Appendix 3(A3.2(B)).

⁴⁵ In contrast, in computing Accumulated Net Revenue, as described below, for contracts with GLBs or GMDBs, account values are projected at specified earnings rates earned by the supporting assets reduced by "all fund and contract charges according to the provisions of the funds and contract." AG43 Appendix 3(A3.3(C)1). See also AG43 Appendix 3(A3.1(A)). It appears, therefore, that the fees taken into account in the Accumulated Net Revenue computation are broader in scope than those taken into account under the Basic Reserve. Proposed Guideline MMMM (which preceded the adoption of AG39) did contain a definition of "appropriate asset based charges." The Sept. 30, 2000 draft of MMMM is based on the integrated CARVM reserve structure outlined in Actuarial Guideline 34. Under the proposed guideline, the Net Assumed Returns were equal to Gross Assumed Returns less all asset-based charges. Asset based charges were defined as including, but were not limited to, mortality and expense charges, asset based administrative and fund charges, and asset based VAGLB charges. See discussion under Variable Annuities with Guaranteed Living Benefits.

⁴⁶ In contrast, the valuation interest rate is defined for calculating Accumulated Net Revenue.

⁴⁷ Section 4b(B).

⁴⁸ AG43 Appendix 3(A3.1(B)2).

⁴⁹ AG33, Text, Paragraph 3. For annuitization benefits, however, the SVL is ambiguous as to whether these issues are to be determined at the contract level or at the benefit level. For example, a life-contingent settlement option in and of itself does not contain cash settlement options. Clarification on this point is given in AG33.

⁵⁰ AG33, Text, Paragraph 3 and Paragraph 4.

⁵¹ AG33, Text, Paragraph 3.

⁵² AG43, Appendix 3(A3.1(B)2).

⁵³ There are three Plan Types. The choices are whether the benefits are Plan Type A or Plan Type C as it is clear that a variable annuity would not fit within the definition of Plan Type B. Plan Type A provides that at any time policyholder may withdraw funds only (1) with an adjustment to reflect changes in interest rates or asset values since receipt of the funds, or (2) without such adjustment but in installments over 5 years or more, or (3) as an immediate life annuity, or (4) no withdrawal permitted. Plan Type C provides that policyholders may withdraw funds before expiration of interest rate guarantee in a single sum or installments over less than 5 years either (1) without adjustment to reflect changes in interest rates or asset values since receipt of the funds by the insurance company, or (2) subject only to a fixed surrender charge stipulated in the contract as a percentage of the fund.

⁵⁴ Absent a market value adjustment feature, a variable annuity would not be a Plan Type B contract. The main difference between Plan Type A and Plan Type B is that in Plan Type A withdrawals are subject to the restrictions listed at any time while in Plan Type B withdrawals are subject to the restrictions only before the expiration of the interest rate guarantee (that is, window period). Since there are no interest guarantees in the variable portion of the contract, the benefit cannot be a Plan Type B. In addition, the language of Actuarial Guideline 35 concerning Equity Indexed Annuities appears to reserve Plan Type B for MGAs.

⁵⁵ Section 811(d) provides that interest in excess of the greater of the PSAR or the AFR and that is guaranteed beyond the end of the year is taken into account only as if such interest was guaranteed until the end of the taxable year.

⁵⁶ Robbins and Bush, *U.S. TAX RESERVES for LIFE INSURERS*.

⁵⁷ AG43 Appendix 3(A3.3(B)2).

⁵⁸ AG43 Appendix 3(A3.3(B)2a).

⁵⁹ AG43 Appendix 3(A3.2(D)).

⁶⁰ AG43 Appendix 3(A3.2(D)).

⁶¹ AG43 Appendix 3(A3.3(B)2b).

⁶² AG43 Appendix 3(A3.3(B)2c).

⁶³ AG43 Appendix 3(A3.1(B)2). As noted above, one of the factors in determining the statutory valuation rate is whether a contract has future interest rate guarantees on future premiums or cash settlement options. This factor is determined using the terms of the contract. AG43 Appendix 3(A3.1(B)2).

⁶⁴ AG43 Appendix 3(A3.3(D)2), footnote 17.

⁶⁵ AG43 Appendix 3, Paragraph A3.3(B)2(b).

⁶⁶ AG43 Appendix 3(A3.3(C)4).

⁶⁷ AG43 Appendix 3(A3.3(C)4).

⁶⁸ AG43 Appendix 3(A3.3(C)4).

⁶⁹ The present value of 5 percent for one year is .9523. Negative \$3 multiplied by .9523 = -\$2.86.

⁷⁰ The present value of 5 percent for two years is .9070. Negative \$12.15 multiplied by .9070 = -\$11.02.

⁷¹ AG43 Appendix 3(A3.3(C)6). The projection used to determine margins may be calculated using an annual or more frequent time step, such as quarterly. For time steps more frequent than annual, assets supporting account values at the start of a year may be retained in such funds until year-end (i.e., margin earned during the year

will earn the fund rates instead of the discount rate until year-end) or removed each time step. Similarly, projected benefits, lapses, elections and other contractholder activity can also be assumed to occur annually or at the end of each time step, but the approach must be consistent for all years.

⁷² AG43 Appendix 3)A3.3)C1)Table I.
⁷³ AG43 Appendix 3)A3.3)C1). As noted above, the Basic Reserve reduces the projected earnings by the “appropriate asset based charges.” Thus, it appears that the fees taken into account in Accumulated Net Revenue are broader in scope than those taken into account under the Basic Reserve.

⁷⁴ AG43 Appendix 3)A3.3)C1).

⁷⁵ AG43 Appendix 3)A3.3)C1).

⁷⁶ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 9.8.

⁷⁷ AG43 Appendix 3)A3.3)C1).

⁷⁸ AG43 Appendix 3)A3.3)C1). Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 9.8.

⁷⁹ AG43 Appendix 3)A3.3)C1).

⁸⁰ AG43 Appendix 3)A3.3)C1).

⁸¹ AG43 Appendix 3)A3.3)C8).

⁸² AG43 Appendix 3, Paragraph A3.3)C5).

⁸³ AG43 Appendix 3)A3.3)C3).

⁸⁴ AG43 Appendix 3)A3.3)C3).

⁸⁵ AG43 Appendix 3)A3.3)C6). The projection used to determine margins is calculated using an annual or more frequent time step, such as quarterly. For time steps more frequent than annual, assets supporting account values at the start of a year may be retained in such funds until year-end (*i.e.*, margin earned during the year will earn the fund rates instead of the discount rate until year-end) or removed each time step. Similarly, projected benefits, lapses, elections and other contract holder activity can also be assumed to occur annually or at the end of each time step, but the approach must be consistent for all years.

⁸⁶ The purpose of the SCAP is to help determine how much of the surrender charge is amortized in the BAR element in the Standard Scenario Reserve and how much needs to be amortized in the ANR. Once determined, the SCAP determines the duration over which the lower level of margins is used. After that duration, the higher level of margins is used. AG43 Appendix 3)A3.3)E).

⁸⁷ AG43 Appendix 3)A3.3)C1)(a).

⁸⁸ AG43 Appendix 3)A3.3)C1)(b).

⁸⁹ AG43 Appendix 3)A3.3)C1)(b).

⁹⁰ AG43 Appendix 3, Paragraph A3.3)C3)Table II.

⁹¹ AG43 Appendix 3, Paragraph A3.3)C3).

⁹² AG43 Appendix 3, Paragraph A3.3)C3).

⁹³ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 9.9.

⁹⁴ AG43 Appendix 3)A3.3)C3)Table II.

⁹⁵ AG43 Appendix 3)A3.3)C7). AG33 requires that for elective benefits, every potential guaranteed elective benefit must be considered by considering trial sets of guaranteed elective benefit incidence rates to determine which trial set produces the greatest present value. As noted above, however, Guideline 33 does not require an actuary to actually test every conceivable integrated benefit stream. For some contracts, it may be possible to demonstrate that only a small number of integrated benefit streams must be considered. In other cases, an exact demonstration may not be possible and some judgment on the part of the actuary may be required.

⁹⁶ AG43 Appendix 3)A3.3)C7).

⁹⁷ AG43 Appendix 3)A3.3)C7).

⁹⁸ AG43 Appendix 3)A3.3)C7).

⁹⁹ In present value terms.

¹⁰⁰ Practice Note for the Application of C-3 Phase II and VA CARVM (Sept. 2005), Q&A 9.6.

¹⁰¹ AG43 Appendix 3)A3.3)E).

¹⁰² AG43 Appendix 3)A3.3)E)1-3.

¹⁰³ If the projection period is less than a year, for example, quarterly, the Surrender Charge Amortization Period would be based on quarterly amounts. For example, if the value in step 3 is 2.15 and the amortization period is quarterly, the Surrender Charge Amortization Period for the contract is 2.25. See AG43, Appendix 3)A3.3)E)4.

¹⁰⁴ Robbins and Bush, *U.S. TAX RESERVES for LIFE INSURERS*, Section 16.2.

¹⁰⁵ AG43 Appendix 3)A3.3)C2).

¹⁰⁶ AG43 Appendix 3)A3.3)C2).

¹⁰⁷ AG43 Appendix 3)A3.3)C2).

¹⁰⁸ AG43 Appendix 3)A3.3)B2).

¹⁰⁹ AG43 Appendix 3)A3.3)B2).

¹¹⁰ AG43, Paragraph IV(B); Appendix 2)A2.1)D).

¹¹¹ 488 F.2d 1101 (3rd Cir. 1974), *aff'g* 58 T.C. 679 (1972).

¹¹² 488 F.2d 1101, 1107 (3rd Cir. 1974).

¹¹³ 96 T.C. 497, 512 (1991).

¹¹⁴ 217 Ct. Cl. 515, 582 F.2d 579 (1978).

¹¹⁵ 73 T.C. 447 (1979).

¹¹⁶ 94 T.C. 499 (1990), *rev'd* 937 F.2d 606 (5th Cir. 1991), decision on remand at T.C. Memo 1993-18.

¹¹⁷ 363 F.Supp. 410 (D.C.La. 1973).

¹¹⁸ See also, *American General Life and Accident Ins. Co. v. United States*, 816 F.2d 376 (8th Cir. 1987).

¹¹⁹ T.C. Memo 1993-18.

¹²⁰ 94 T.C. 499 (1990).

¹²¹ 937 F.2d 606 (5th Cir. 1991).

¹²² T.C. Memo 1993-18.

¹²³ At issue was whether the company could make a section 818 adjustment under the 1959 Act to increase the amount of CRVM reserve. The purpose of the section 818 adjustment was to allow companies that computed CRVM reserves to obtain a tax deduction approximately equal to the net level premium reserve. The idea was that companies with surplus constraints, which held preliminary term reserves, should not be tax disadvantaged to companies that held (and deducted) net level reserves. The net level premium reserve was \$9.4 million. Basically, the Tax Court held that because USAA's reserve (including the cash surrender value) and the net level pre-

mium reserve were nearly the same, section 818 did not apply, even though USAA computed a CRVM reserve. The fact that the company held an additional liability for the cash surrender value led the court to compare the cash surrender value to the net level premium reserve, with the court concluding that the cash surrender value was a life insurance reserve because it was an amount equal to the net level premium reserve reduced by an unamortized amount.

¹²⁴ Prior to the adoption of AG37 for GMDBs for variable life contracts, some states required an assumed asset drop of one-third to determine the level of reserves required for the GMDB and Connecticut required an immediate one-third drop for variable annuities.

¹²⁵ TAM 8111079.

¹²⁶ This ruling was suspended in Rev. Rul. 2007-61.

¹²⁷ See 1992-1 NAIC Proc. 1375, 1396.

¹²⁸ Model Variable Annuity Regulation, Section 6E.

¹²⁹ Appendix A-250, Paragraph 3, as adopted by SSAP 56, Paragraph 23 and SSAP 80, Paragraph 7a.

¹³⁰ 1993-2 NAIC Proc. 1009.

¹³¹ See *Mutual Benefit Life Insurance Company v. Commissioner*, 488 F.2d 1101 (3rd Cir. 1974), *aff'd* 58 T.C. 679 (1972); *Union Mutual Life Insurance Company v. United States*, 570 F.2d 382 (1st Cir. 1978); *Lincoln National Life Insurance Co. v. United States*, 217 Ct. Cl. 515, 582 F.2d 579 (1978).

¹³² See also, GCM 38403.

¹³³ SSAP No. 7, Paragraph 2.

¹³⁴ AG43 Appendix 3)A3.3)B)2)c); AG43 Appendix 3)A3.3)D)1); AG43 Appendix 3)A3.3)D)2).

¹³⁵ AG-43 Appendix 3)A3.3)C)2).

¹³⁶ AG43 Appendix 3)A3.3)D)1).

¹³⁷ AG-43 Appendix 3)A3.3)B)2)(c) and Appendix 3)A3.3)D)3).

¹³⁸ AG-43 Appendix 3)A3.3)D)3).

¹³⁹ AG43 Appendix 3)A3.3)D)1).

¹⁴⁰ AG-43 Appendix 3)A3.3)B)2).

¹⁴¹ AG43 Appendix 3)A3.3)B)2).

¹⁴² AG43 Appendix 3)A3.3)B)2).

¹⁴³ AG43 Appendix 3)A3.3)D)2), footnote 17.

¹⁴⁴ AG43 Appendix 3)A3.3)D)2).

¹⁴⁵ AG43 Appendix 3)A3.3)D)2).

¹⁴⁶ For this purpose, CMT refers to the nominal yields on actively traded noninflation indexed issues adjusted to constant maturities as released by the Federal Reserve Board. AG43 Appendix 3)A3.3)D)2)footnote 16.

¹⁴⁷ The Domiciliary Commissioner may require the exclusion of any portion of the value of approved hedges upon a finding that the company's documentation, controls, measurement, execution of strategy or historical results are not adequate to support a future expectation of risk reduction commensurate with the value of approved hedges. AG43 Appendix 3)A3.3)D)2).

¹⁴⁸ AG43 Appendix 3)A3.3)D)2).

¹⁴⁹ AG43 Appendix 3)A3.3)D)2).

¹⁵⁰ AG43, Paragraph IV(B); Appendix 2)A2.1)D).

¹⁵¹ SSAP 61, Paragraph 16.

¹⁵² AG43 Appendix 3)A3.3)D)1).

¹⁵³ AG43 Section I)Background.

¹⁵⁴ AG43 Appendix 2)A2.2).

¹⁵⁵ AG-43 Section IV)General Description)D).

¹⁵⁶ AG-3 Appendix 3)A3.3)B)2).

¹⁵⁷ Robbins and Bush, *U.S. TAX RESERVES for LIFE INSURERS*, Chapter 4, Section 4.10.

¹⁵⁸ AG-43 Appendix 6)A6.1)A). Since the Standard Scenario Reserve is, by definition, greater than or equal to the cash surrender value, the difference between the Standard Scenario Reserve and the cash surrender value for each contract can never be less than zero. AG43 Appendix 6)A6.1)footnote 39.

¹⁵⁹ AG43 Appendix 6)A6.2).

¹⁶⁰ AG43 Appendix 6)A6.1)B).

¹⁶¹ AG43 Appendix 6)A6.1).

¹⁶² Section 807(d)(3)(C).

¹⁶³ 1984 Blue Book, at p. 598; H.R. Rept. 99-426, 99th Cong., 1st Sess. (1985), p. 956; Explanation of Technical Corrections to the Tax Reform Act of 1984 and Other Recent Tax Legislation (1987), p. 99 (Blue Book). See also, S. Rept. 99-313, 99th Cong., 2d Sess. p. 975 (1986).

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