ADDENDUM I TO THE PRACTICE NOTE FOR THE APPLICATION OF C-3 PHASE II AND ACTUARIAL GUIDELINE XLIII

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This practice note addendum was prepared by a work group set up by the Life Practice Note Steering Committee of the American Academy of Actuaries ("VA Practice Note Work Group"). It is an update of the July 2009 C-3 Phase II and Actuarial Guideline XLIII Practice Note and represents a description of practices believed by the VA Practice Note Work Group to be commonly employed by actuaries in the United States in 2009 relative to additional questions raised since the Practice Note was first published.

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This practice note addendum has been organized into a "Question & Answer" format consistent with the organization of the Practice Note, providing answers to a variety of issues companies are expected to deal with when implementing C-3 Phase II and Actuarial Guideline XLIII. Note that throughout this practice note addendum Actuarial Guideline XLIII is referred to as AG 43.

Please provide any comments to the Academy's Life Policy Analyst at life@actuary.org.

Section 1 – Details on Products Covered

1. Does AG 43 apply to synthetic Guaranteed Interest Contracts (GICs)?

   AG 43 does not apply to synthetic GICs since a synthetic GIC is not one of the types of products included under the AG 43 scope. However AG 43 is applicable to guaranteed benefits similar in nature to Guaranteed Minimum Death Benefits (GMDBs) or Variable Annuities with Guaranteed Living Benefits (VAGLBs) in such synthetic GIC contracts. Section II)A)4)a) of the AG 43 Scope states that in this case "the Guideline shall be applied to the benefit on a standalone basis (i.e., for the purposes of the reserve calculation, the benefit shall be treated as a separate contract)."

2. Does AG 43 apply to Guaranteed Minimum Accumulations Benefits (GMABs) or Guaranteed Minimum Income Benefits (GMIBs) embedded in Variable Universal Life (VUL) contracts?

   A. AG 43 Footnote 5 indicates that the Guideline would apply to GMABs and GMIBs in VUL contracts if these benefits are similar in nature to VAGLBs. Footnote 5 also indicates that "the Guideline would generally only apply to the VAGLB-type benefit, since there is an explicit reserve requirement that applies to the variable life contract."

3. Do Group Deferred Variable Annuities without GMDBs or Guaranteed Minimum Living Benefits (GMLBs) fall under the scope of AG 43?

   A. AG 43 applies to all individual and group variable annuities subject to CARVM, whether on not they have guarantees, and it also applies to group annuity contracts that are not subject to CARVM, but only if those contracts contain guarantees similar in nature to GMDBs, VAGLBs, or any combination thereof. The actuary would be advised to consider whether the group deferred variable annuity being considered falls under the scope of CARVM in the Standard Valuation law

4. Does AG 43 apply to a lifetime Guaranteed Minimum Withdrawal Benefit (GMWB), or other Guaranteed Living Benefit (GLB), attached to an Equity Indexed Annuity?

   A. Some actuaries believe that, based on AG 43 Section II A)4 footnote 5, Lifetime GMWB and other GLBs attached to Equity Indexed Annuities are subject to AG 43, if the benefits are similar in nature to VAGLBs. While there is an explicit reserve requirement for the underlying contract, they believe that there is no explicit reserve requirement for the living benefits.

   Others believe that the Lifetime GMWB or other GLB can be considered to be another guaranteed benefit stream valued under AG 33 and AG 35.

   The actuary would be advised to carefully consider the nature of the benefit and whether the guarantee is similar in nature to a VAGLB, following the requirements and guidance in Section II)A). The actuary may wish to consider whether Section II)C), which states "Separate account products that guarantee an index and do not offer GMDBs or VAGLBs are excluded from the scope of the Guideline" implies that a VAGLB offered with an Equity Indexed Annuity falls under the scope of AG 43.

Section 3 – Consistency and Differences Between C-3 Phase II and AG 43 Requirements

1. What are the differences between AG 43 and C-3 Phase II in the discount rate used in the Conditional Tail Expectation (CTE) and Standard Scenario calculations, other than pre-tax / post-tax? Is it appropriate to adjust the discount rate for default charges, investment expenses and credit spreads?

   A.
   <u>CTE Calculation:</u>
   Section A1.2)B) of AG 43 states that "Accumulated Deficiencies shall be discounted using the same interest rates at which positive cash flows are invested, as determined in section A1.4)D). Such interest rates shall be reduced to reflect expected credit losses." Some actuaries interpret these different approaches to be variations on new money rates.

The C-3 Phase II report states that "companies that do not use an integrated model are to use the implied forward rates from the swap curve. Companies that do have an integrated model may use the rates generated by that model or the swap curve, but must use the method chosen consistently from year to year. The Report further states that "Interest earnings on existing assets should be reduced to reflect expected credit losses."

Neither AG 43 nor C-3 Phase II mention an adjustment for investment expenses in determining the discount rate.

Standard Scenario Calculation:
AG 43 section A3.1)B)2) defines the discount rate (DR) as "valuation interest rate specified by the Standard Valuation Law on an issue year basis, using Plan Type A and a Guarantee Duration greater than 10 years but not more than 20 years."

C-3 Phase II – LR025 defines DR to be the "annual effective equivalent of the 10-year constant maturity treasury rate reported by the Federal Reserve for the month of valuation plus 50 basis points," subject to a maximum and minimum.

2. Are you aware of any requirements for using the phase-in provision?

   A. LR025 allows a company to smooth the TAR. LR025 states that "a company is required to get approval from its domestic regulator prior to changing its decision about smoothing from the prior year."

   Phase-in for AG 43 is an option the company may request from the Domiciliary Commissioner. It is not an automatic option as certain conditions (see AG 43 Section V Effective date) and permission is required. As of November 13, 2009, the NAIC's Life and Health Actuarial Task Force has stated that it is hoping to provide a standardized methodology for the phase-in provision. Actuaries should watch for any final guidance from the Task Force.

3. GMIB Purchase Rate Questions

   a. Stochastic Scenarios
      AG 43 Section A1.5) A) states that the projected annuitization purchase rates for GMIBs shall be determined assuming that market interest rates available at the time of election are the interest rates used to project General Account Assets. If a company does not currently offer or plan to offer annuitization purchase rates in excess of policy guarantees, is the company allowed to use only the guaranteed rates in the projections?

      A. Some actuaries believe this is consistent with the principles of AG 43.

   b. Standard Scenario
      AG 43 Section A3.3) C) 3) is silent regarding purchase rates for GMIBs, however, when determining the current value of unexercised GMIBs, the actuary must compare income generated by GMIB election and income produced under "normal settlement option provisions of the contract." This seems to imply guaranteed rates if that is company practice. Is the actuary free to choose GMIB purchase rates under the Standard Scenario?

      A. Since the document is silent on the purchase rate assumption to use under the standard scenario then some actuaries believe that the actuary is given the authority to use what he or she believes is a reasonable assumption and to document the reason for the choice. However, the individual product contract likely states the various settlement options available and those should be considered when making this comparison. For example, if the account value can be annuitized at current purchase rates, it is possible that the income generated under this normal settlement option may be larger than the income guaranteed by the living benefit, which may have less favorable guaranteed purchase rates.

In contrast, the interpretation of some actuaries is that the income stream is projected using the contractual guarantees and the method of discounting specified in section A3.3)C)3) of AG 43. Under this interpretation there appears to be no need for 'current' GMIB purchase rates within the standard scenario.

Section 4 – Types of Models/Granularity

1. Is a company permitted to make changes in the modeling platform used to determine the requirements of AG 43? Once a company selects either the CTE Amount Based on Projections described in AG 43 Section IV or the Alternative Methodology described in Appendix 4 of AG 43 can the selection be changed?

   A. Changes in the model/s may be made, but where appropriate, disclosure may be required and/or regulatory approval may need to be sought.

   Examples of changes that some actuaries believe are not likely to require regulatory approval but are simply associated with (natural) model development include those relating to improvements, updates, errors and corrections, new product features, and new actuarial software platforms.

   However, per Section IV)E) of AG 43, moving from the CTE Amount Based on Projections to the Alternative Methodology needs regulatory approval from the Domiciliary Commissioner. Some actuaries believe that moving from the Alternative Methodology to the stochastic CTE methodology does not require approval and point to AG 43 Section IV)E) and Appendix 8 of the C-3 Phase II Report.

2. Will there still be a need for Asset Adequacy Testing for variable annuities under AG 43?

   A. The AOMR requires an opinion for all reserves based upon asset adequacy analysis, and this is discussed in the answers to Questions 3.6 & 3.7 in the Practice Note. The actuary may wish to consult Actuarial Standard of Practice No. 22, to determine whether the projections required for AG 43 and/or C-3 Phase II would be acceptable to use in support of the company's asset adequacy analysis, and what other testing should be done.

Section 5 – Details on Starting Assets

1. If a direct writer has reinsured 100% of its variable annuities to a reinsurer, what assets can it use to do any modeling that requires assets?

   A. If under the terms of the reinsurance agreement, some or all of the assets supporting the reserve are held by the reinsurer or by another party, the ceding company may wish to consider whether to model such assets in order to determine projected cash flows. Since neither AG 43 nor C-3 Phase II prescribes a methodology for performing asset modeling, some actuaries believe that it is the responsibility of the certifying actuary to determine an appropriate methodology. In the absence of more explicit guidance from AG 43 and C-3 Phase II, some actuaries look to the most recent version of C-3 Phase III as being a reasonable source for the response that follows:

   In some situations, it may not be necessary to model the assets held by the other party. Some actuaries would "consider at least the following to determine if modeling the assets is necessary:

   a. The degree of linkage between the portfolio performance, and the calculation of the modified coinsurance (modco) interest and modco reserve; and

   b. The sensitivity of the valuation result, both the direct and ceded amounts, to the asset portfolio performance.

   If the company concludes that modeling is necessary, the modeling will take into account the following:

a. The investment strategy of the company holding the assets, as codified in the reinsurance agreement or otherwise based on current documentation provided by that company; and

b. Actions that may be taken by either party that would affect the net reinsurance cash flows (e.g., a conscious decision to alter the investment strategy within the guidelines).

If the company concludes that modeling is unnecessary, the company should document the testing and logic leading to that conclusion."

Note - Special considerations for modified coinsurance: Although the modco reserve is called a reserve, it is substantively different from other reserves. It is a fixed liability from the ceding company to the reinsurer in an exact amount, rather than an estimate of a future obligation. The modco reserve is analogous to a deposit. This concept is clearer in the economically identical situation of funds withheld. Therefore, the value of the modified coinsurance reserve will generally not have to be determined by modeling. However, the projected modified coinsurance interest may have to be modeled. In many cases, the modified coinsurance interest is determined by the investment earnings of an underlying asset portfolio, which in some cases will be a segregated asset portfolio or in others the ceding company's general account. Some agreements may use a rate not tied to a specific portfolio.

2. For a particular scenario, can either the Scenario Greatest Present Value (under AG 43) or the Total Asset Requirement (under C-3 Phase II) be lower than the Starting Assets?

   A. It is possible for the Scenario Present Value to be less than Starting Assets, implying that the greatest present value that is added to the starting asset is negative. This would mean that the starting asset that is the first estimate of the reserve would be "more than enough" to cover the projected benefits under the scenario.

Section 6 – Details on Scenarios/Scenario Generators/Economic Assumptions

1. Is there a standardized way to extend the Academy prepackaged scenarios beyond 30 years? When is it expected that they will next be updated?

   A. There is no standardized way to extend the Academy prepackaged scenarios. In connection with other Academy projects, the scenario generator is being reviewed and may be extended. If and when this occurs, information will be posted on the Academy website.

Section 7 – Details on Actuarial/Modeling Assumptions

1. Revenue Sharing: Would revenue sharing from an agreement where either party could terminate the agreement with proper notification qualify as guaranteed revenues sharing under AG 43?

   A. There are at least two views as to how to interpret the guarantee requirement.

   A "strict interpretation" of the guarantee would require that the guarantee must be absolute into the future. This would mean that if the agreement can be terminated or changed by either party then the Revenue Sharing should be considered to be non-guaranteed.

   In contrast, some actuaries believe that in this example, the revenue sharing would only be guaranteed during the proper notification beyond, but not beyond.

   In addition, some agreements may contain a provision that even after the agreement terminates the revenue sharing is still paid as long as the assets remain with the insurance company. Some actuaries would argue that in this case the revenue sharing is guaranteed since it is paid as long as there are assets with the insurance company.

   Whatever position the company takes, it has to be stated in the documentation required by AG 43.

2. Section A1.1)E)6) of AG 43 explicitly limits non-contractually guaranteed Net Revenue Sharing Income to 25 bps. Does this extend to C-3 Phase II? Given that C-3 Phase II should be more conservative does this imply C-3 Phase II should have a lower upper bound on such Revenue Sharing?

   A. C-3 Phase II doesn't limit non-contractual guarantees for Net Revenue Sharing Income to 25 bps. Some actuaries believe that it is appropriate to use a different Net Revenue Sharing Income assumption for C-3 Phase II than for AG 43. C-3 Phase II requires that the amount of projected Net Revenue Sharing Income reflect a margin for error (which decreases the assumed Net Revenue Sharing Income) directly related to the uncertainty of the revenue. The greater the uncertainty, the larger the margin. Other actuaries believe that companies will also choose to use the same Net Revenue Sharing Income assumption for C-3 Phase II as that used in AG 43. This needs to be noted in the documentation for AG 43 and C-3 Phase II.

3. If you don't have fully credible mortality experience and need to blend your experience with the 94 Minimum Guaranteed Death Benefit (MGDB) Table, but you currently have A/E ratios based on the Annuity 2000 Table, is it better to rerun your mortality study against 94 MGDB to do the blending?

   A. Some actuaries believe that one approach is to run the mortality study under the 94 MGDB and note the Actual to Expected Mortality Ratio prevailing, and then run the regular study based on the Annuity 2000 table. The Actual to Expected Ratio (A/E) based on 94 MGDB to the A/E based on the Annuity 2000 table would provide an estimate of the ratio of the 94 MGDB expected to the Annuity 2000 expected deaths. This ratio may now be used as a proxy for the ratio to blend with when doing credibility weighting.

Section 8 – Details on Alternative Methodology

1. Can the alternative methodology be used for variable immediate annuities?

   A. Section IV and Appendix 4 of AG 43 describe the Alternative Method as one for a "variable deferred annuity contract." Although C-3 Phase II is silent here, some actuaries believe the Alternative Method for RBC is also only to be used for deferred annuity contracts

2. Does moving from the Alternative Method to the stochastic method require approval?

   A. Some actuaries believe approval is not needed to move from the Alternative Method to the stochastic method and point to AG 43 Section IV)E) and C-3 Phase II Report, "Alternative Method." The only requirement appears to be to get approval to move from the stochastic to the Alternative Method.

3. Is moving from the Alternative Method for 2009 to stochastic for 2010 a basis change in the Exhibit 5A sense?

   A. Some actuaries believe the answer is "no" in that the method is still defined by AG 43. Their reasoning is that changes in assumptions, for example, that historically were considered a change in valuation basis are fundamental to a principle-based reserve method and should not be considered a change in basis.

Section 9 – Details on Standard Scenario

1. Please elaborate on the issue/possible definitions of "guaranteed" revenue sharing within the standard scenario calculation.

   A. This question is one where there could be a large diversity of practice.

   Some actuaries would argue that revenue sharing is guaranteed, on the following basis:

i. There is a contract in place that does guarantee some form of revenue sharing even if it can be rescinded with notice and therefore it is contractually guaranteed during the notice period.

ii. Some agreements may contain a provision that even after the agreement terminates the revenue sharing is still paid as long as the assets remain within the funds.

iii. The elimination of 12b-1 fees may not eliminate all revenue sharing and that as long as a fund remains in the product, a guaranteed level of revenue sharing will occur and if the fund is pulled from the product it could be replaced with another fund that would pay some form of revenue sharing.

Conversely, some actuaries believe that the 1940 Investment Company Act seems to preclude assuming that any revenue sharing can be seen as being contractually guaranteed. Generally, revenue sharing contracts that are entered into with mutual fund companies must contain a notice of termination provision allowing the Board of the mutual fund company to terminate the Investment Advisor and/or 12b-1 fees with notice. This framework seems to create a situation whereby it would be difficult to state that more than a small number of months of revenue sharing could be guaranteed.

2. Are non-contractually guaranteed revenue sharing streams allowed under the standard scenario?

   A. Non-contractually guaranteed revenue sharing streams cannot be reflected in the calculation of the revenue margins under the standard scenario in AG 43. A3.3)C)1)a)(ii) states that only net revenue sharing income that is contractually guaranteed to the insurer and its liquidator, receiver, and statutory successor can be included. There is no reference to the ability to include non-contractually guaranteed revenue sharing. The reference to A)1.1)E is for the definition of net revenue sharing income.

3. AG 43 seems to suggest exercising the earliest guaranteed living benefit, but this may decrease or eliminate future living benefits. Should the actuary ignore waiting periods? Should the actuary assume that benefits are exercised at the earliest possible opportunity versus waiting to achieve the most valuable benefit?

   A. Some actuaries would assume that withdrawals should not start if they are prior to the ability to exercise <u>without penalty</u>.

   A3.3)C)7) states that the policyholder election rate for any exercisable in-the-money (ITM) guaranteed living benefit should be zero if exercise would cause extinction of a guaranteed living benefit having a larger current value.

   Some actuaries may argue that the above language is only applicable to benefits that are a combination of different living benefit guarantees (such as a combo GMAB and GMWB), but others may argue this applies to rollups and other features that are available within the living benefit. Practicality may be a driving factor in decisions since it may be very difficult to find the optimal time-point for starting withdrawals and companies may find that starting withdrawals later may give the greatest policyholder benefit, but actually produce lower reserves due to present value, market growth, and additional margins collected.

4. Is it only in the current value calculation for GMWBs for which Annuity 2000 mortality is used? Otherwise 70% (graded to 100%) of the 94 MGDB table is used? When calculating the current value for ITM purposes, is the present value calculated using the whole stream of benefits or does it only represent those benefit payments made once the Account Value is less than zero?

   Some actuaries would state that the Annuity 2000 language is only included in section A3.3)C)3), which is used to establish the level of ITM for determining lapse and withdrawal rates. Others may conclude that this language is applicable whenever the account value goes to zero, although this may conflict with A3.3)C)5). AG 43 section A3.3)C)3) does state that after a GMWB with

payments that are contingent upon the survival of the annuitant or owner has commenced, then the Current Value is required to assume survival using the Annuity 2000 Mortality Table. AG 43 section A3.3)C)5) states that the mortality to be used in the projection to determine the greatest present value amount is the 1994 MGDB graded table.

Since the current value is compared to the account value, all benefit payments should be included, not just those payments where the account value goes to zero.

5. Section A3.2)B) states: "The calculation of the Basic Reserve shall assume a return on separate account assets based on the year of issue statutory valuation rate less appropriate asset based charges, including charges for any guaranteed death benefits or guaranteed living benefits." Is this specifically limited to benefit charges that are a percentage of assets or can benefit charges that are a percentage of a benefit base also be used?

   A. Some actuaries would state that both could be used in the calculation since many product designs have charges for guaranteed benefits keyed off the benefit base.

6. We have assumed that fees for living benefits don't reduce fund value for the AG 33 projection. We assume living benefit fees are considered in the basic adjusted reserve projection. Should Investment Management Fees be considered?

   A. Section A3.2)A) requires that the basic reserve for a given contract shall be determined by applying statutory valuation requirements applicable immediately prior to adoption of the Guideline. Section A3.2)B) requires the use of statutory valuation rate less appropriate asset based charges, including charges for any guaranteed death benefits or guaranteed living benefits. Section A3.2)D) states to follow Section A3.2)A) and Section A3.2)B) except that, in A3.2)A), free partial withdrawal percentages shall be disregarded. Therefore, AG 43 has not changed the application of AG 33 regarding the recognition of investment management fees.

7. Does the AG 43 standard scenario apply to variable immediate annuities?

   A. Yes. Section 1 states that "The guideline requires that reserves for contracts falling within its scope be based on a minimum floor determined using a standard scenario plus the excess over this minimum floor, if any, of a reserve calculated using a projection ...."

8. Are systematic programs for fund transfers the kind of "required" program that has to be taken into account per AG 43 Section A3.3)C)4)?

   A. A3.3)C)4) states that no transfers will be reflected unless required by the contract. If the systematic program for fund transfers is required as a condition of the contract, then this language would state that it would have to be reflected. But if the policyholder can opt out of this feature, then some actuaries would argue that it wouldn't be reflected. Other actuaries would conclude that this is a contractual provision, so that transfers under this program should be reflected.

9. The AG 43 standard scenario allows for the recognition of approved hedges and requires the use of the assumed returns in the standard scenario for valuing these hedges. Since the assumed returns given are fund returns, what valuation should be used for interest rate hedges?

   A. There are many approaches to the valuation of interest rate hedges. Some actuaries may state that the interest rates specified in the liquidation provision of A3.3)D)2) is the appropriate method for valuing these hedges, while others may state that this is only applicable for options since it is combined with volatility assumptions. Other actuaries may state that a 0% bond or money market fund yield implies a certain interest rate scenario. Still others may hold the current interest rate curve constant or use it to determine a forward curve for interest rates over the next year.

10. Are there simplifications in the C-3 Phase II Standard Scenario that can be made to determine ITM-ness (and hence Standard Scenario lapses rate) such as utilizing the AG 43 type approach of a point in time test?

    A. Some actuaries may argue that as long as the future value of the guarantee is accounted for, calculating the ITM as of each projection point (similar to AG 43) will likely be a good representation of whether the policy will be ITM since the growth is positive from that point in time. A judgment that a policy is not ITM right now because it can't be exercised would seem to violate the language of C-3 Phase II.

Section 10 – Treatment of Reinsurance

1. Reinsurance (100% QS): Ceding Company ABC calculates the CTE for its block and allocates the excess to individual contracts. Reinsurer XYZ calculates the CTE for the entire company, which is different than ABC's CTE. XYZ allocates the excess to individual contracts. Therefore, ABC's gross reserve for a contract ≠ XYZ's reserve for the same contract. Is this acceptable?

    A. Yes, this is acceptable. The ceding and assuming companies may have different reserves.

2. Is the reinsurance premium paid to Reinsurer XYZ included as revenue in the formula in A3.3)C)1) for Reinsurer XYZ's Standard Scenario calculation, or is it included in the calculation under A3.3)C)2)?

    A. For ceding company reporting and the calculation of the Standard Scenario Reserve, Section A3.3)C)2) states that "Individual reinsurance premiums projected to be payable on ceded risk and receivable on assumed risk shall be included in the Projected Net Revenue. Similarly, Individual reinsurance benefits projected to be receivable on ceded risk and payable on assumed risk shall be included in the Projected Net Revenue. No Aggregate reinsurance shall be included in Projected Net Revenue."

    Therefore in the case of GMDB and/or VAGLB only reinsurance, the revenue is considered to be a reinsurance premium for the reinsurance company.

    If the entire contract is fully or partially reinsured on a quota share basis, the Reinsurer should determine Projected Net Revenue as if it were the direct writer of its share of the contract. The reinsurance premium for the ceding company is the reinsurer's share of Projected Net Revenue.

3. If a direct writer has reinsured its minimum guarantees to a reinsurer (and hence has no need to hedge what is left) and the reinsurer hedges its risk, would you expect a very large ceded credit for the direct writer relative to the reinsurers assumed reserve?

    A. In this situation, the reinsurance ceded reserve credit will not necessarily equal the reserve established for the assumed block of business by the reinsurer. The assumed reserve may differ from the ceded reserve credit for other reasons as well, such as the ceding and assuming companies using different Prudent Estimate assumptions.

Section 11 – Treatment of Hedging

1. Are there circumstances in which hedging risk can lead to an increase in reserves or capital?

    A. Although hedging is meant to mitigate or minimize risks, it does so with an associated cost. Hedging may cause projected gains in some scenarios, as well as projected losses in others. It may be dependent upon the circumstances of the inforce. This in turn could translate into higher reserves or risk-based capital. Hedging substitutes a risk neutral return for an unknown return, but to the extent that the AG 43 scenarios have significantly higher drift rates and/or significantly lower volatility assumptions, the option values associated with risk neutral hedging scenarios may be larger than the reserves produced by CTE calculations even though the CTE calculations only consider the tail scenarios. Another way to look at this is that it depends on the returns of the hedge assets in the CTE scenarios versus other assets that would be used in place of hedge

assets, such as general account bonds. If the hedge assets have lower returns than bonds in the CTE 70 calculation for reserves, then hedging may lead to an increase in reserves. One may find that in such a situation the reverse happens in the CTE 90 calculation and hedging lowers RBC.

2. Am I required to reflect hedging in the CTE calculations if it increases reserves or RBC?

   A. (i) For currently held hedges (i.e. hedges in place as of the valuation date) the answer is "yes." AG 43 Appendix 7 and Appendix 10 of the C-3 Phase II Report both say that the costs and benefits of hedging instruments that are currently held by the company on the valuation date must be reflected.

   (ii) As for future hedges that the company would enter into under a hedging strategy, some actuaries believe that if a Clearly Defined Hedging Strategy (CDHS) is in place and hedging increases the CTE results, it must be reflected This is based on AG 43 Appendix 7 – "If a company is following a CDHS, the model shall take into account the cost and benefits of hedge positions expected to be held by the company in the future based on the operation of the hedging strategy." and Appendix 10 of the C-3 Phase II Report –"Provided the company is following a CDHS, the model shall take into account the cost and benefits of hedge positions expected to be held by the company in the future based on the operation of the hedging strategy."

   If a CDHS is not in place some actuaries believe hedging should not be reflected as there is a very specific definition of a CDHS and associated requirements. On the other hand, some actuaries believe hedging should be reflected and point to the Principles in AG 43 and C-3 Phase II as well as the following:

   AG 43 Appendix 7 states:

   > "Although a hedging strategy would normally be expected to reduce risk provisions, the nature of the hedging strategy and the costs to implement the strategy may result in an increase in the amount of the Conditional Tail Expectation Amount otherwise calculated. The fundamental characteristic of the first method is that all hedge positions, both currently held positions and those expected to be held in the future, are included in the stochastic cash flow model used to determine the Scenario Greatest Present Value…," and
   >
   > "Regardless of the methodology used by the company, the ultimate effect of the current hedging strategy (including currently held positions) on the Conditional Tail Expectation Amount needs to recognize all risks, associated costs, imperfections in the hedges and hedging mismatch tolerances associated with the hedging strategy. The risks include, but are not limited to: basis, gap, price,…."

   Appendix 10 of the C-3 Phase report states:

   > "Although a hedging strategy would normally be expected to reduce risk provisions, the nature of the hedging strategy and the costs to implement the strategy may result in an increase in the amount of TAR otherwise calculated. The fundamental characteristic of the first method is that all hedge positions, both currently held positions and those expected to be held in the future, are included in the stochastic cash flow model used to determine the greatest present value of accumulated deficiencies for each scenario," and
   >
   > "Regardless of the methodology used by the company, the ultimate effect of the current hedging strategy (currently held positions) on the TAR amount needs to recognize all risks, associated costs, imperfections in the hedges and hedging mismatch tolerances associated with the hedging strategy. The risks include, but are not limited to: basis, gap, price,…."

3. Can the AG 43 "E" factor be less than 1.0 if the "best efforts" CTE amount exceeds the "adjusted" CTE amount?

A. Some actuaries believe that if a company is following a CDHS and the "best efforts" result exceeds the "adjusted," it is unreasonable to use a factor of less than one. However, other actuaries interpret the requirements as specifically prohibiting "E" in excess of .70 (or .30 when hedge flows are not modeled directly).

4. Which scenarios should be included, under AG 43, in the determination of the CTE Amount (reported) when blending CTE Amount (best efforts) with CTE Amount (adjusted) as per Appendix 7? Should the "same" worst 30% of the scenarios be used in the CTE calculation?

   A. Some actuaries believe that the "best effort" and "adjusted" CTE Amounts should be independently calculated without using the "same" scenarios. Therefore, the CTE Amount (reported) is likely to be more conservative than would be produced if the effectiveness were captured on a scenario-by-scenario basis.

   I.e., CTE Amount (reported) = CTE Amount{E x Scenario GPV(best efforts) + (1-E) x Scenario GPV(adjusted)}.

   Where:
   E is the "effectiveness factor" as per Appendix 7.

   CTE Amount (best efforts) as per Appendix 7:
   "… based on incorporating the hedging strategy (including currently held hedge positions) into the stochastic cash flow model."

   CTE Amount (adjusted) as per Appendix 7:
   "… assuming the company has no dynamic hedging strategy (i.e., reflect only hedge positions held by the company on the valuation date)."

Section 12 – Consistency of AG 43, C-3 Phase II and C-3 Phase I Models

1. Section A.2.2) of AG 43 states that "the amount of the reserve held in the General Account shall not be less than the excess of the Aggregate Reserve over the sum of the Basic Reserve, as defined in section A3.2), attributable to the variable portion of all such contracts."

   a. How is the portion of the Basic Reserve attributable to the variable portion determined?

      A. One simplification for determining the portion of the Basic Reserve attributable to the variable portion of the contracts would be to split the Basic Reserve for each contract between General Account and Separate Account based on the ratio of the total fund value of the contract in each fund type (General Account or Separate Account).

   b. How is the excess of the Aggregate Reserve over the sum of the Basic Reserve broken down as to what is attributable to the variable portion and fixed portion of the contracts?

      A. Some actuaries believe that the fund value for the variable portion would be held as a liability in the Green Book, with the difference between the fund value and the Basic Reserve for the variable portion transferred from the Separate Account to the General Account as the CARVM allowance.

Section 13 – Details on Certification & Required Documentation

1. How often does the memorandum need to be updated?

   A. Some actuaries believe that the certification submission is required to be made once per year at the time that the Appointed Actuary submits the Actuarial Opinion on the entire company, in light of:

1. Paragraph 8.1 of Appendix 8 in AG 43, which notes that the certification is to be provided “as part of the valuation documentation that the valuation appropriately reflects management’s intent and ability to carry out specific courses of actions on behalf of the entity where such is relevant to the valuation,” and

2. Appendix 11 of C-3 Phase II guidelines requiring compliance with NAIC RBC instructions, which apply to only the year-end RBC submission.

More frequent submissions, for example, to obtain regulatory reviewer feedback on updated assumptions or methods in advance of the year-end submission, can be made at the discretion of the actuary.