# SEPARATE ACCOUNTS
LR006

*Basis of Factors*

Separate Accounts With Guarantees
Guaranteed separate accounts are divided into two categories: indexed and non-indexed.

**Guaranteed indexed separate accounts may invest using various approaches which are grouped into Class I or Class II strategies. Additional information on these types of accounts and on the analysis underlying the following requirements is provided in the AAA Report "Proposed New Risk-Based Capital Method for Separate Accounts that Guarantee an Index" adopted by the NAIC Life Risk Based Capital Working Group in New York, NY June, 2003.**

**Indexed Class I Strategies:**

**A company using a Class I strategy invests separate account assets in much the same way it would for its general account. If the guaranteed index obligation is not similar in nature to a traditional general account fixed annuity, the company may transform the financial characteristics of the obligation, using an overlay strategy, to those characteristics that are similar to a traditional general account fixed annuity (e.g. the company swaps the guaranteed index return to an interest rate). General account C-1 factors apply to assets invested using a Class I strategy. If a company uses an overlay strategy, there is an additional charge for operational and other residual financial risk attributable to the use of the overlay strategy. Also, a Class I strategy is subject to a C-3 interest rate risk charge as described in LR023.**

**Indexed Class II Strategies:**

**A company using a Class II strategy does not follow a traditional general account investment strategy when investing deposits. Under this strategy, the company is buying securities that are either included in the underlying index or are highly correlated with these underlying securities. Alternatively, a mix of strategies that are market neutral in aggregate or that are not normally associated with general account investing could form the core investment strategy. This strategy may be combined with an overlay strategy that transforms the returns to the guaranteed index. The RBC factor derivation is described below. The factor determined in the calculation includes both C-1 and C-3 risk. A spreadsheet at www.naic.org/XXX is available to do the calculation.**

**Non-Indexed Separate Accounts:**

Non-indexed separate accounts with guarantees are subject to the risk of the underlying assets, therefore 100 percent of the calculated risk-based capital of these accounts is appropriate. Contracts reserved at book value are reported for the RBC calculation exactly as if they were General Account funded.

For contracts valued using the fair value of assets and the fair value (at current interest rates) of liabilities, risk-based capital is calculated as the excess of the regular C-1 and C-3 standards over the applicable reserve margins. New York Regulation 128 and California CIC 10506 are two examples of state valuation laws regulating such business. The reserve margin is calculated as the excess of the book/adjusted carrying value of the assets supporting the reserve (including any supplemental general account reserves) over the present value of the guaranteed payments. The present value of guaranteed payments is calculated using the expected net portfolio rate of return, and is not to exceed 105 percent of U.S. Treasury spot rates. The excess, if any, of the asset value over the present value of guaranteed payments is first applied to reduce the C-3 requirement. The remainder is used to reduce the C-1 requirement. The risk-based capital amount to be entered in the worksheet is the C-1 and C-3 requirements for these contracts after these credits. Excess margins may not be applied to contracts for which these amounts are not available.

Synthetic GICs

Synthetic GICs are contracts with provisions similar to separate accounts with guarantees, except that the insurance company does not own the assets. For business of this type, the C-1 and C-3 risk-based capital is determined to be the same as if the insurance company owned the assets and provided the same guarantees as in a guaranteed separate account.

Surplus in Non-Guaranteed Separate Accounts

There are a variety of reasons why surplus appears in non-guaranteed separate accounts, e.g., remaining seed money, or as a margin for certain risks assumed by the insurance company. The risk-based capital for such separate accounts is 11 percent of surplus held in such separate accounts before taxes plus 11 percent of the Commissioners Reserve Valuation Method (CRVM) or the Commissioners Annuity Reserve Valuation Method (CARVM) expense allowance transfers before taxes if the current surrender charge is based on the fund balance. If the current surrender charge is based on fund contributions, then the risk-based capital charge for the expense allowance component is 2.4 percent of the CRVM or CARVM expense allowance before taxes for each contract for which the fund balance exceeds the sum of the premiums less withdrawals; otherwise, it is an 11 percent factor pre-tax.

*Specific Instructions for Application of the Formula*

**Line (1)**

**The amounts reported for Guaranteed Indexed Separate Accounts must be calculated manually.**

**Component 1 is calculated by applying the NAIC RBC C-1 factors to the assets supporting the Class I indexed separate accounts. However, this calculation does not include the size factor for bonds, the experience adjustments for mortgages or the concentration factor.**

**Component 2 is calculated if an overlay strategy is used with all or a portion of the Class 1 indexed separate accounts. It is calculated as the product of 0.004 times that portion of the assets using an overlay strategy.**

**Component 3 is the amount of RBC calculated for Class II indexed separate accounts using the procedure described below.**

**Class II indexed separate accounts base the RBC requirement on a factor from a prescribed calculation that is described below. The factor times the net separate account assets is the RBC Requirement.**

1. **Determine the series {X(t)} as actual net tracking error (fund performance minus guaranteed performance) for the most recent 60 months.**

2. **Convert each value X(t) to a value Y(t) using the formula, Y = (X -m)*K*(1+.15)+24*m**

   **Where m is the mean of the series {X(t)} and K is an adjustment factor to account for the variance of the distribution Y including serial correlation. More information on the K adjustment factor is described in the aforementioned June 2003 AAA Report and is calculated in the associated supporting spreadsheet at www.naic.org/XXX. Covariance is set to 0 if the corresponding serial correlation is less than 0.20. The sample standard deviation in the terms above is increased 15% to allow for sampling error in the data series and to allow for the possibility of a shortfall during the first two years. The sample standard deviation is constrained so that it is not less than 50% or greater than 150% of the standard deviation calculated without correlation.**

3. **Order the series {Y(t)} in ascending order. Set any positive values to zero. Average the first six values. Change the sign and the result is the 90 CTE capital for C1 and C3.**

4. **Where there is less than 30 months of tracking error history the capital charge for C1 and C3 is 4%. If we have 30 months or higher of history, the 4% factor is**

**gradually phased out. For 30 months, actual experience is weighted by the square root of 30/60 and the 4% factor is weighted by one minus the square root of 30/60. For 31 months experience is weighted by the square root of 31/60 and the 4% factor is weighted by one minus the square root of 31/60. This pattern continues up to month 59 when experience is weighted by the square root of 59/60 and the 4% factor is weighted by 1 minus the square root of 59/60.**

5. **The actual experience based calculation, under step (3) above, needs to be adjusted when there are less than 60 months of experience to gauge the 90 CTE. If the number of months divided by 10 is an integral number n, take the average of the first n values after the series is put in ascending order with positive values set to zero. If n is non integral, then set n to the next highest integral number and interpolate, using each average of the of the first n-1 and n values after the series is set in ascending order and positive values are set to zero. For example, if there are 37 values the idea is to identify the worst 3.7 of them. This is done by interpolating, taking 30% of the average of the first three values and 70% of the average of the first four values.**

6. **The resulting RBC factor is subject to a minimum 0.4%.**

Lines (2) and (3)

The amounts to be reported for non-indexed Separate Accounts with guarantees [Line (2) and Line (3), Column (2)] must be calculated manually. Risk-based capital for these amounts should be calculated using the Life company formula; however, the RBC calculation for non-indexed separate accounts should not include the size factor for bonds, the experience adjustment for mortgages or the concentration factor.

Line (11)

**R**eport the CRVM or CARVM expense allowance transfers where the current surrender charge is based on the fund balance or all other expense allowance transfers.

Line (12)

Report the CRVM or CARVM expense allowance transfers where the current surrender charge is based on fund contributions for each contract for which the fund balance exceeds the sum of the premiums less withdrawals.

Line (14)

The total assets of separate accounts with guarantees and separate accounts without guarantees of the formula should be equal to total separate account assets on Page 2, Line 25, Column 3 of the Annual Statement.

# INTEREST RATE RISK

LR023

*Basis of Factors*

The interest rate risk is the risk of losses due to changes in interest rate levels. The factors chosen represent the surplus necessary to provide for a lack of synchronization of asset and liability cash flows.

The impact of interest rate changes will be greatest on those products where the guarantees are most in favor of the policyholder and where the policyholder is most likely to be responsive to changes in interest rates. Therefore, risk categories vary by withdrawal provision. Factors for each risk category were developed based on the assumption of well matched asset and liability durations. A loading of 50 percent was then added on to represent the extra risk of less well matched portfolios. Companies must submit an unqualified **actuarial** opinion **based on asset adequacy testing** to be eligible for a credit of one-third of the RBC otherwise needed.

Consideration is needed for products with credited rates tied to an index as the risk of synchronization of asset and liability cash flows is tied not only to changes in interest rates but also to changes in the underlying index. In particular, equity-indexed products have recently grown in popularity with many new product variations evolving. The same C-3 factors are to be applied for equity-indexed products as for their non-indexed counterparts, i.e., based on guaranteed values ignoring those related to the index.

In addition, some companies may be required to calculate part of the RBC on certain annuities and single premium life insurance under a method using cash flow testing techniques. Refer to **LR042** for determination of exemption from this cash flow testing requirement.

Reserves on Certain Annuities and Single Premium Life Insurance that were Cash Flow Tested for Asset Adequacy – Factor-Based RBC
See Appendix 1 of the instructions for more details.

The risk categories are:

(a) Low Risk Category

The basic risk-based capital developed for annuities and life insurance in the low risk category was based on an assumed asset/liability duration mismatch of 0.125 (i.e., a well matched portfolio). This durational gap was combined with a possible 4 percent one-year swing in interest rates (the maximum historical interest rate swing 95 percent of the time) to produce a pre-tax factor of 0.0077. In addition to the 50 percent loading discussed above, the risk-based capital pre-tax factor is 0.0115.

(b) Medium and High Risk Category

The factors for the medium and high risk categories were determined by measuring the value of the additional risk from the more discretionary withdrawal provisions based on assumptions of policyholder behavior and 1000 random interest rate scenarios. Supplementary contracts not involving life contingencies (SCNI) and dividend accumulations are included in the medium risk category due to the historical tendency of these policyholders to be relatively insensitive to interest rate changes.

Additional Component for Callable/Pre-Payable Assets

Identify the amount of callable/pre-payable assets (including IOs and similar investments) supporting reserves classified in this section. The C-3 requirement after taxes is 50 percent of the excess, if any, of book/adjusted carrying value above current call price. The calculation is done on an asset by asset basis. NOTE: If a company is required to calculate part of the RBC based on cash flow testing for C-3 RBC, the callable/pre-payable assets adjustment for any such assets used in that testing is reversed in a later step of the calculation.

Reserves that were not Cash Flow Tested for Asset Adequacy – Factor-Based RBC

The risk categories are:

(a) Low Risk Category

The basic risk-based capital developed for annuities and life insurance in the low risk category was based on an assumed asset/liability duration mismatch of 0.125 (i.e., a well matched portfolio). This durational gap was combined with a possible 4 percent one-year swing in interest rates (the maximum historical interest rate swing 95 percent of the time) to produce a pre-tax factor of 0.0077. In addition to the 50 percent loading discussed above, the risk-based capital pre-tax factor is 0.0115.

(b) Medium and High Risk Category

The factors for the medium and high risk categories were determined by measuring the value of the additional risk from the more discretionary withdrawal provisions based on assumptions of policyholder behavior and 1000 random interest rate scenarios. Supplementary contracts not involving life contingencies (SCNI) and dividend accumulations are included in the medium risk category due to the historical tendency of these policyholders to be relatively insensitive to interest rate changes.

Additional Component for Callable/Pre-Payable Assets

Identify the amount of callable/pre-payable assets (including IOs and similar investments) not reported above. This includes callable/pre-payable assets supporting other reserves and capital and surplus. The C-3 requirement after taxes is 50 percent of the excess, if any, of book/adjusted carrying value above current call price. The calculation is done on an asset by asset basis.

Cash Flow Testing for C-3 RBC

Based on the results of **LR042** C-3 RBC Cash Flow Testing Exemption **Test**, a company may be required to perform cash flow testing to determine its RBC requirement. Because of the widespread use of increasingly well disciplined scenario testing for **a**ctuarial **o**pinion**s based upon an a**sset **a**dequacy **a**nalysis involving cash flow testing (CFT), it was determined that a practical method of measuring the degree of asset/liability mismatch existed. It involves further cash flow testing. See "Appendix 1 – Cash Flow Testing for C-3 RBC" for details.

*Specific Instructions for Application of the Formula*

Lines (2) through (16)

These lines deal with products for which reserves were cash flow tested for asset adequacy. The fixed portion of equity-based variable products should be included in Lines (18) through (31). **Guaranteed indexed separate accounts following a Class I investment strategy are reported as low risk Line 2 and those following a Class II investment strategy are excluded.** Company source records entered in Column (3) of Lines (13) , (15) and (16) should be adjusted to a pre-tax basis.

Line (17)

Should equal the sum of Lines (6) + (11) + (14) + (15). Line (16) is not included in the Line (17) total. Instead, it is included in the Line (32) total.

Lines (18) through (31)

These lines cover:

(a) The remaining company business that was not cash flow tested for asset adequacy (see Appendix 1 for details), and

**(b)** Business in companies that did not cash flow test for asset adequacy**.**

The calculation for risk-based capital should not include unitized separate accounts without guarantees even though they may be included in Item **32** of the Notes to Financial Statements. Separate accounts with guarantees should be included, except for **those separate accounts that guarantee an index and follow a Class II investment strategy and** certain **other** guaranteed separate accounts as defined below. Synthetic GICs net of certain credits should be included in this section. The provisions for these credits to C-3 requirements is provided in the Separate Accounts section of the risk-based capital instructions. Experience rated pension contracts defined below should be excluded from "annuity reserves with fair value adjustment" and "annuity reserves not withdrawable." All amounts should be reported net of reinsurance, net of policy loans and adjusted for assumed and ceded modified coinsurance.

Experience rated group and individual pension business that meets all of the following four conditions is excluded from C–3 factor-based risk:

(a) General account funded;

(b) Reserve interest rate is carried at no greater than 4 percent and/or fund long-term interest guarantee (in excess of a year) does not exceed 4 percent;

(c) Experience rating mechanism is immediate participation, retroactive credits, or other technique other than participating dividends; and

(d) Either is not subject to discretionary withdrawal or is subject to fair value adjustment, but only if the contractually defined lump sum fair value adjustment reflects portfolio experience as well as current interest rates and is expected to pass both credit risk and rate risk to the policyholder at withdrawal. (A lump sum settlement based only on changes in prevailing rates does not meet this test. Book value cash out options meet this test as long as the present value of payments using U.S. Treasury spot rates is less than or equal to the lump sum fair value on the valuation date and the policyholder does not have an option to change the payment period once payments begin).

For companies not exempt from cash flow testing for C-3 RBC, such testing is to include those experience rated products exempted from the formula factors, but for which cash flow testing is done as a part of the asset adequacy testing.

**Non-indexed s**eparate account business with guarantees that satisfy both conditions (b) and (d) above is excluded from C–3 factor-based risk.

**Guaranteed indexed separate account business following a Class I investment strategy is reported on Line (18). Note that in the "AAA Report on Separate Accounts That Guarantee an Index" (adopted by the NAIC Life Risk Based Capital Working Group in New York, NY June, 2003), there is a stress test applicable to Class I investment strategies for a company that is not subject to scenario testing requirements. At this time, this part of the AAA report is not being implemented in the NAIC RBC formula, but it will be for 2005.**

Company source records entered in Column (3) of Lines (30) and (31) should be adjusted to a pre-tax basis.

Line (33)

Enter in Column (3) the pre-tax interest rate risk results of cash flow testing per the Appendix 1a methodology. Line (33) should only be completed if the answer to Line (**14**) or Line (22) of **LR042** C-3 Cash Flow Testing for C-3 RBC Exemption **Test** is "Yes".

Line (34)

If Line (33) is equal to zero, then Line (34) should equal Line (32). Otherwise, Line (34) should equal Line (32) plus Line (33) less Line (16) less Line (17) subject to a maximum of 2 times Line (32) and a minimum of 0.5 times Line (32).

**Line (35)**

**Total Market Risk for 2004 should be entered as 0. (Line added for recommendation on Variable Annuities and Similar Products which will not be effective for December 31, 2004.)**

Unitized separate account business with guarantees provided via guaranteed living benefits is handled as follows:

(a) The factor is applied to the sum of reserves for the base separate account plan plus any additional reserves for guaranteed living benefits ("base amounts"). The calculation is done net of reinsurance. For purposes of the calculation, the gross reserve for the base separate account plan is reduced proportionally to the extent the guaranteed living benefits are reinsured on a proportional basis.

(b) The policy is assigned to the medium risk category if the following two conditions are both met:

1. The actuary submits an unqualified reserve adequacy opinion for the company, and

2. On a seriatim basis, the fund balance for a particular policy is no less than the "effective floor," where the "effective floor" is determined as the floor benefit accrued as of the annual statement date. For guaranteed minimum income benefits, the floor is further adjusted by multiplying by a factor of 80 percent (to account for margins to the insurer from policyholder requirement to annuitize).

Include the "base amounts" in Line (23) Column (2) of LR023 Interest Rate Risk if the two conditions above are met.

(c) If the above two conditions are not met, the policy is assigned to the high-risk category. Include the "base amounts" in Line (28) Column (2) of LR023 Interest Rate Risk.

Structured settlements are reported in the medium risk category and consist of either immediate or deferred payout annuities that are purchased from damages received on account of personal injuries or sickness. The payments under these contracts should be excludable from the annuitants' gross income for tax purposes under Sec 104(a)(2) of the Internal Revenue Code.

The total of all Annual Statement reserves representing exposure to C–3 risk on Line (34) should equal the following:

Exhibit 5, Column 2, Line 0199999
– Page 2, Column 3, Line 5
+ Exhibit 5, Column 2, Line 0299999
+ Exhibit 5, Column 2, Line 0399999
+ Exhibit 7, Column 1, Line 14
+ Separate Accounts Page 3, Column 3, Line 1 through Line 5 **after deducting (a)** funds in unitized separate accounts with no underlying guaranteed minimum return and no unreinsured guaranteed living benefits**; (b) non indexed separate accounts that are** no**t** cash flow tested with guarantees less than 4 percent**; (c)** non-cash-flow-tested experience rated pension reserves/liabilities**; and (d) guaranteed indexed separate accounts using a Class II investment strategy**.
– Non policyholder reserves reported on Exhibit 7
+ Exhibit 5, Column 2, Line 0799997
+ Schedule S, Part 1, Section 1, Column 11
– Schedule S, Part 3, Section 1, Column 13

# EXEMPTION TEST: CASH FLOW TESTING FOR C-3 RBC
## LR042

***Specific Instructions for Application of the Formula***

**Line (5)**
**Column (1) Line (5) will need to be manual entry if the company has any equity indexed product amounts included in the totals from the Interest Rate Risk Page LR023. Line (5) is calculated as LR023 Interest Rate Risk Column (3) Line (17) times 0.65 plus LR023 Interest Rate Risk Column (3) Line (16) times 0.65 minus any equity indexed product amounts included in these totals times 0.65.**

**Line (6)**
**Column (1) Line (6) will also be manual entry if the company has any equity indexed product amounts subtracted from Line (5) above. Line (6) is calculated as LR023 Interest Rate Risk Column (3) (Line (22) + (27) + (29) + (30) + (31) ) x 0.65 plus any Equity Indexed amounts subtracted in the Line (5) calculation.**

**Line (16)**
**Column (1) Line (16) will need to be manual entry if the company has any equity indexed product amounts included in the totals from the Interest Rate Risk Page LR023. Line (16) is calculated as LR023 Interest Rate Risk Column (3) Line (17) times 0.65 plus LR023 Interest Rate Risk Column (3) Line (16) times 0.65 minus any equity indexed product amounts included in these totals times 0.65.**

**Line (17)**
**Column (1) Line (17) will need to be manual entry if the company has any equity indexed product amounts included in the totals from the Interest Rate Risk Page LR023. Line (17) is calculated as LR023 Interest Rate Risk Column (3) Line (17) times 6.5 times 0.65 minus any equity indexed product amounts included in these totals times 6.5 times 0.65.**

**Line (18)**
**Column (1) Line (18) will also be manual entry if the company has any equity indexed product amounts subtracted from Line (16) above. Line (18) is calculated as LR023 Interest Rate Risk Column (3) (Line (22) + (27) + (29) + (30) + (31) ) x 0.65 plus any Equity Indexed amounts subtracted in the Line (5) calculation.**

## Appendix 1 – Cash Flow Testing for C-3 RBC

This appendix is applicable only for companies that are not exempt from Cash Flow Testing for C-3 RBC (see **LR042**).

The method of developing the C-3 component is building on the work of the asset adequacy modeling, but using interest scenarios designed to help approximate the 95th percentile C-3 risk.

The revised C-3 component is to be calculated as the sum of four amounts, but subject to a minimum and maximum. The calculation is:

(a) For Annuities or Single Premium Life Insurance products other than equity-indexed products, whether written directly or assumed through reinsurance, that the company tests for Asset Adequacy Analysis using cash flow testing, an actuary should calculate the C-3 requirement based on the same cash flow models and assumptions used and same "as-of" date as for Asset Adequacy, but with a different set of interest scenarios, and a different measurement of results. A weighted average of a subset of the scenario specific results is used to determine the C-3 requirement.

If the "as-of" date of this testing is not 12/31, the ratio of the C-3 requirement to reserves on the "as-of" date is applied to the year end reserves, similarly grouped, to determine the year-end C-3 requirement for this category.

(b) Equity-indexed products are to use the existing C-3 RBC factors, not the results of cash flow testing.

(c) For all other products (either non-cash-flow-tested or those outside the product scope defined above) the C-3 requirements are calculated using current existing C-3 RBC factors and instructions.

(d) For callable/pre-payable assets (including IOs and similar investments other than those used for testing in component a) above, the C-3 requirement is 76.9 percent of the excess, if any, of book/adjusted carrying value above current call price. The calculation is to be done on an asset by asset basis.

The total C-3 component is the sum of a, b, c and d, but not less than half nor more than double the C-3 component based on current factors and instructions. This result is to be divided by 0.65 to put it on a pre-tax basis for LR023 Interest Rate Risk Column (2) Line (33).

- For this C-3 calculation, "annuities" means products with the characteristics of deferred and immediate annuities, structured settlements, guaranteed separate accounts **(excluding guaranteed indexed separate accounts following a Class II investment strategy)**, and GICs (including synthetic GICs, and funding agreements). Debt incurred for funding an investment account is included if cash flow testing of the arrangement is required by the insurer's state of domicile for Asset Adequacy Analysis. The equity-based portions of variable products are not to be included, but guaranteed fixed options within such products are. See Appendix 1b for further discussion.

- The company may use either a standard 50 scenario set of interest rates or an alternative, but more conservative, 12 scenario set (for part a, above). It may use the smaller set for some products and the larger one for others. Details of the cash flow testing for C-3 RBC methodology are contained in Appendix 1a.

## Appendix 1a – Cash Flow Testing for C-3 RBC Methodology

General Approach

1. The underlying asset and liability model(s) are those used for year-end Asset Adequacy Analysis cash flow testing, or a consistent model.

2. Run the scenarios (12 or 50) produced from the interest-rate scenario generator.

3. The statutory capital and surplus position, S(t), should be captured for every scenario for each calendar year-end of the testing horizon. The capital and surplus position is equal to statutory assets less statutory liabilities for the portfolio.

4. For each scenario, the C-3 measure is the most negative of the series of present values S(t)*pv(t), where pv(t) is the accumulated discount factor for t years using 105 percent of the after-tax one-year Treasury rates for that scenario. In other words:

$$pv(t) = \prod_{1}^{t} 1/(1+i_t)$$

5. Rank the scenario-specific C-3 measures in descending order, with scenario number 1's measure being the positive capital amount needed to equal the very worst present value measure.

6. Taking the weighted average of a subset of the scenario specific C-3 scores derives the final C-3 after tax factor.

   (a) For the 50 scenario set, the C-3 scores are multiplied by the following series of weights:

   ---------- Weighting Table ----------

| Scenario Rank: | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Weight: | 0.02 | 0.04 | 0.06 | 0.08 | 0.10 | 0.12 | 0.16 | 0.12 | 0.10 | 0.08 | 0.06 | 0.04 | 0.02 |

   The sum of these products is the C-3 charge for the product.

   (b) For the 12 scenario set, the charge is calculated as the average of the C-3 scores ranked 2 and 3, but cannot be less than half the worst scenario score.

7. If multiple asset/liability portfolios are tested and aggregated, an aggregate C-3 charge can be derived by first summing the S(t)'s from all the portfolios (by scenario) and then following steps 2. through 6. above. An alternative method is to calculate the C-3 score by scenario for each product, sum them by scenario, then order them by rank and apply the above weights.

Single Scenario C-3 Measurement Considerations

1. GENERAL METHOD - this approach incorporates interim values, consistent with the approach used for bond, mortgage and mortality RBC factor quantification. The approach establishes the risk measure in terms of an absolute level of risk (e.g., solvency) rather than volatility around an expected level of risk. It also recognizes reserve conservatism, to the degree that such conservatism hasn't been used elsewhere.

2. INITIAL ASSETS = RESERVES - consistent with Appointed Actuary practice, the cash flow models are run with initial assets equal to reserves; that is, no surplus assets are used.

3. AVR - existing AVR-related assets should not be included in the initial assets used in the C-3 modeling. These assets are available for future credit loss deviations over and above expected credit losses. These deviations are covered by C-1 risk capital. Similarly, future AVR contributions should not be modeled. **However, the expected credit losses should be in the cash flow modeling. (Deviations from expected are covered by both the AVR and the C-1 risk capital.)**

4. IMR - IMR assets should be used for C-3 modeling. (Also see #9 – Disinvestment Strategy)

5. INTERIM MEASURE - retained statutory surplus (i.e., statutory assets less statutory liabilities) is used as the year-to-year interim measure.

6. TESTING HORIZONS - surplus adequacy should be tested over a period that extends to a point at which contributions to surplus on a closed block are immaterial in relationship to the analysis. If some products are being cash flow tested for Asset Adequacy Analysis over a longer period than the 30 years generated by the interest rate scenario generator, the scenario rates should be held constant at the year 30 level for all future years. A consistent testing horizon is important for all lines if the C-3 results from different lines of business are aggregated.

7. TAX TREATMENT - the tax treatment should be consistent with that used in Asset Adequacy Analysis. Appropriate disclosure of tax assumptions may be required.

8. REINVESTMENT STRATEGY - the reinvestment strategy should be that used in Asset Adequacy Analysis modeling.

9. DISINVESTMENT STRATEGY – In general, negative cash flows should be handled just as they are in the Asset Adequacy Analysis. The one caveat is that, since the RBC scenarios are more severe, models that depend on borrowing need to be reviewed to be confident that loans in the necessary volume are likely to be available under these circumstances at a rate consistent with the model's assumptions. If not, adjustments need to be made.

   If negative cash flows are handled by selling assets, then appropriate modeling of contributions and withdrawals to the IMR need to be reflected in the modeling.

10. STATUTORY PROFITS RETAINED - the measure is based on a profits retained model, anticipating that statutory net income earned one period is retained to support capital requirements in future periods. In other words, no stockholder dividends are withdrawn, but policyholder dividends, excess interest, declared rates, etc. are modeled realistically and assumed, paid or credited.

11. LIABILITY and ASSET ASSUMPTIONS - the liability and asset assumptions should be those used in Asset Adequacy Analysis modeling. Disclosure of these assumptions may be required.

12. SENSITIVITY TESTING – Key assumptions shall be stress tested (e.g. lapses increased by 50 percent ) to evaluate sensitivity of the resulting C-3 requirement to the various assumptions made by the actuary. Disclosure of these results may be required.

**SEPARATE ACCOUNTS** #REF!

| | | Annual Statement Source | (1) Book / Adjusted Carrying Value | | (2) Factor or Calc | | (3) RBC Requirement | |
|---|---|---|---|---|---|---|---|---|
| | Separate Accounts with Guarantees | | | | | | | |
| (1) | Guaranteed Indexed | Page 2 Column 3 Line 25 in part | | | § | | | * |
| (2) | Non-Indexed, Reserved at Book Value | Company records | | | RBC x 1.000 | | | |
| (3) | Non-Indexed, Reserved at Fair Value | Company records | | | RBC x 1.000 (less "haircut") | | | |
| (4) | Total Assets in Separate Accounts with Guarantees† (pre-MODCO/Funds Withheld) | Lines (1) + (2) + (3) | | | | | | |
| (5) | Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements | Company Records (enter a pre-tax amount) | | | | | | |
| (6) | Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements | Company Records (enter a pre-tax amount) | | | | | | |
| (7) | Total Assets in Separate Accounts with Guarantees (including MODCO/Funds Withheld.) | Lines (4) - (5) + (6) | | | | | | |
| | Synthetic GIC's | | | | | | | |
| (8) | Synthetic GIC's C-1 Requirement | Company Records (enter a pre-tax amount) | | | RBC x 1.000 (less "haircut") | | | |
| | Surplus in Non-Guaranteed Separate Accounts | | | | | | | |
| (9) | Assets in Separate Accounts | Page 2 Column 3 Line 25 in part | | X | 0.110 | = | | |
| (10) | Less Liabilities in Separate Accounts | Page 3 Column 1 Line 27 in part | | X | 0.110 | = | | |
| (11) | Expense Allowance Transfers - All Other | Page 3 Column 1 Line 13‡ in part | | X | 0.110 | = | | |
| (12) | Expense Allowance Transfers - Surrender Charge Based on Fund Contribution and the Fund Balance Exceeds the Sum of the Premiums Less Withdrawals | Page 3 Column 1 Line 13‡ in part | | X | 0.024 | = | | |
| (13) | Total Surplus in Non-Guaranteed Separate Accounts† | Lines (9) - (10) + (11) + (12) | | | | | | |
| (14) | Total Separate Accounts Assets (Column (1) should equal Page 2 Column 3 Line 25) | Lines (4) + (9) | | | | | | |

† The amount reported in Column (2) should not be less than zero.

‡ The expense allowance transfers for Lines (11) and (12) should be entered as a positive value in Column (1).

§ **If Column (3) is not equal to zero, Column (2) is calculated as Column (1) divided by Column (3).**

* **Column (3) is calculated according to the risk-based capital instructions. A minimum factor of 0.004 would apply according to the instructions.**

Denotes items that must be manually entered on the filing software. #REF!

**INTEREST RATE RISK**

| | | | (1) |
|---|---|---|---|
| (1.1) | Unqualified Actuarial Opinion **Based on Asset Adequacy Testing**? | ["Yes" or "No" in Column (1)] | |
| (1.2) | C-3 RBC Cash Flow Testing on Annuities or Single Premium Life? | ["Yes" or "No" in Column (1)] | |
| (1.3) | If Line (1.2) is "Yes", is the Appointed Actuary C-3 Assumption Statement Attached? | ["Yes" or "No" in Column (1)] | |

| | RESERVES ON CERTAIN ANNUITIES AND SINGLE PREMIUM LIFE INSURANCE THAT WERE CASH FLOW TESTED FOR ASSET ADEQUACY (See Appendix 1 of the instructions for more details.) | Annual Statement Source | (2) Statement Value | | Factor | | (3) RBC Requirement |
|---|---|---|---|---|---|---|---|
| | Low Risk Category that were Cash Flow Tested for Asset Adequacy | | | | | | |
| (2) | Annuity Reserve with Market Value Adjustment (excluding unitized separate accounts)* | Notes to Financial Statements Item **32** Line A1, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (3) | Annuity Reserve not Withdrawable (excluding structured settlements)* | Notes to Financial Statements Item **32** Line B, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (4) | Guaranteed Investment Contract (GIC) Reserve within 1 Year of Maturity£ | Notes to Financial Statements Item **32** Various Lines, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (5.1) | Single Premium Life Insurance Reserves Net of Reinsurance | Exhibit 5 Column 2 Line 0199999, in part | | | | | |
| (5.2) | Less Single Premium Life Insurance Reserves Policy Loans | Page 2 Line 5, in part | | | | | |
| (5.3) | Plus Modified Coinsurance Assumed Single Premium Life Reserves net of Modified Coinsurance Assumed Policy Loans | Schedule S Part 1 Section 1 Column 11, in part‡ | | | | | |
| (5.4) | Less Modified Coinsurance Ceded Single Premium Life Reserves net of Modified Coinsurance Ceded Policy Loans | Schedule S Part 3 Section 1 Column 13, in part‡ | | | | | |
| (5.5) | Single Premium Life Insurance Reserves | Line (5.1) - (5.2) + (5.3) - (5.4) | | X | 0.0115 or 0.0077† | = | |
| (6) | Total Low Risk | Lines (2) + (3) + (4) + (5.5) | | | | | |
| | Medium Risk Category that were Cash Flow Tested for Asset Adequacy | | | | | | |
| (7) | Annuity Reserve at Book Value Less Surrender Charge of 5 Percent or More* | Notes to Financial Statements Item **32** Line A2, in part‡ | | X | 0.0231 or 0.0154† | = | |
| (8) | Exhibit 7 Reserve not Included Elsewhere § | Exhibit 7 Line 14 amounts not included elsewhere in Interest Rate Risk (C-3)‡ | | X | 0.0231 or 0.0154† | = | |
| (9) | Structured Settlements | Notes to Financial Statements Item 28 Line B, in part‡ | | X | 0.0231 or 0.0154† | = | |
| (10) | Additional Actuarial Reserves for Annuities and Single Premium Life - Asset/Liability Analysis | Exhibit 5 Column 2 Line 0799997, in part | | X | 0.0231 or 0.0154† | = | |
| (11) | Total Medium Risk | Sum of Lines (7) through (10) | | | | | |

† The factors are decreased by one-third if the company submits an unqualified actuarial opinion **based on asset adequacy testing**. The diskette automatically recalculates the factor, depending on the answer to Line (1.1).

‡ Net of reinsurance, less policy loans, plus modified coinsurance assumed reserves, less modified coinsurance ceded reserves. Include "base amounts" for unitized separate account business with guarantees provided via guaranteed living benefits, as applicable per the instructions.

§ Excluding any non-policyholder reserves (e.g., reserves that are not related to specific policies).

* Excluding GICs within 1 year of maturity.

£ Includes GICs within 1 year of maturity subtracted elsewhere.

Denotes items that must be manually entered on the filing software.

**INTEREST RATE RISK (Continued)**

| | | Annual Statement Source | (2) Statement Value | | Factor | | (3) RBC Requirement |
|---|---|---|---|---|---|---|---|
| | High Risk Category that were Cash Flow Tested for Asset Adequacy | | | | | | |
| (12) | Annuity Reserve at Book Value Without Adjustment (minimal or no charge or adjustment)* | Notes to Financial Statements Item **32** Line A5, in part‡ | | X | 0.0462 or 0.0308† | = | |
| (13) | Debt with GIC-like Characteristics (see Appendix 1 & 1b instructions) | Company records (enter a pre-tax amount) | | | | | |
| (14) | Total High Risk | Line (12) + (13) | | | | | |
| | Synthetic GIC's | | | | | | |
| (15) | Synthetic GIC's C-3 Requirement | Company records (enter a pre-tax amount) | | | | | |
| | Callable/Pre-Payable Assets | | | | | | |
| (16) | Callable/Pre-Payable Assets Assigned to Products Categorized Above | Company records (enter a pre-tax amount) | | | | | |
| (17) | Subtotal of Factor Based RBC For Products Categorized Above | Lines (6) + (11) + (14) + (15) | | | | | |
| | ALL OTHER RESERVES (exclude statement amounts included in Lines (2) to (17) above) | | | | | | |
| | Low Risk Category | | | | | | |
| (18) | Annuity Reserve with Market Value Adjustment (excluding unitized separate accounts and eligible experience rated pension and separate accounts with guarantees)* | Notes to Financial Statements Item **32** Line A1, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (19) | Annuity Reserve not Withdrawable (excluding structured settlements and eligible experience rated pension and separate accounts with guarantees)* | Notes to Financial Statements Item **32** Line B, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (20) | Guaranteed Investment Contract (GIC) Reserve within 1 Year of Maturity£ | Notes to Financial Statements Item **32** Various Lines, in part‡ | | X | 0.0115 or 0.0077† | = | |
| (21.1) | Life Insurance Reserves Net of Reinsurance | Exhibit 5 Column 2 Line 0199999, in part | | | | | |
| (21.2) | Less Life Insurance Reserves Policy Loans | Page 2 Line 5, in part | | | | | |
| (21.3) | Plus Modified Coinsurance Assumed Reserves net of Modified Coinsurance Assumed Policy Loans | Schedule S Part 1 Section 1 Column 11, in part‡ | | | | | |
| (21.4) | Less Modified Coinsurance Ceded Reserves net of Modified Coinsurance Ceded Policy Loans | Schedule S Part 3 Section 1 Column 13, in part‡ | | | | | |
| (21.5) | Life Insurance Reserves | Line (21.1) - (21.2) + (21.3) - (21.4) | | X | 0.0115 or 0.0077† | = | |
| (22) | Total Low Risk | Lines (18) + (19) + (20) + (21.5) | | | | | |

† The factors are decreased by one-third if the company submits an unqualified actuarial opinion **based on asset adequacy testing**. The diskette automatically recalculates the factor, depending on the answer to Line (1.1).

‡ Net of reinsurance, less policy loans, plus modified coinsurance assumed reserves, less modified coinsurance ceded reserves. Include "base amounts" for unitized separate account business with guarantees provided via guaranteed living benefits, as applicable per the instructions.

§ Excluding any non-policyholder reserves (e.g., reserves that are not related to specific policies).

* Excluding GICs within 1 year of maturity.

£ Includes GICs within 1 year of maturity subtracted elsewhere.

Denotes items that must be manually entered on the filing software.

**INTEREST RATE RISK (Continued)**

| | | Annual Statement Source | (2) Statement Value | | Factor | | (3) RBC Requirement |
|---|---|---|---|---|---|---|---|
| | Medium Risk Category | | | | | | |
| (23) | Annuity Reserve at Book Value Less Surrender Charge of 5 Percent or More* | Notes to Financial Statements Item **32** Line A2, in part‡ | | X | 0.0231 or 0.0154† | = | |
| (24) | Exhibit 7 Reserve not Included Elsewhere § | Exhibit 7 Line 14 amounts not included elsewhere in Interest Rate Risk (C-3)‡ | | X | 0.0231 or 0.0154† | = | |
| (25) | Structured Settlements | Notes to Financial Statements Item **32** Line B, in part‡ | | X | 0.0231 or 0.0154† | = | |
| (26) | Additional Actuarial Reserves - Asset/Liability Analysis | Exhibit 5 Column 2 Line 0799997, in part | | X | 0.0231 or 0.0154† | = | |
| (27) | Total Medium Risk | Sum of Lines (23) through (26) | | | | | |
| | High Risk Category | | | | | | |
| (28) | Annuity Reserve at Book Value Without Adjustment (minimal or no charge or adjustment)* | Notes to Financial Statements Item **32** Line A5, in part‡ | | X | 0.0462 or 0.0308† | = | |
| (29) | Total High Risk | Line (28) | | | | | |
| | Synthetic GIC's | | | | | | |
| (30) | Synthetic GIC's C-3 Requirement | Company records (enter a pre-tax amount) | | | RBC x 1.000 (less "haircut") | | |
| | Callable/Pre-Payable Assets | | | | | | |
| (31) | Callable/Pre-Payable Assets Not Allocated to Line (16). Include Callable/Pre-Payable Assets Allocated to Surplus | Company records (enter a pre-tax amount) | | | | | |
| (32) | Interest Rate Risk Based Completely on Factors | Lines (16) + (17) + (22) + (27) + (29) + (30) + (31) | | | | | |
| (33) | C-3 RBC Cash Flow Testing Interest Rate Risk (If C-3 RBC Cash Flow Testing Exemption Worksheet Line (13) = "Yes" or Line (22) = "Yes" then calculate the cash flow scenario testing interest rate risk for annuities and single premium life products that were cash flow tested for C-3 RBC) | Company records (enter a pre-tax amount) | | | C-3 RBC Cash Flow Testing | | |
| (34) | Total Interest Rate Risk | If Line (33) = 0, then Line (34) = Line (32). Otherwise, Line (34) = Line (32) + (33) - (16) - (17), subject to a maximum 2 times Line (32) and a minimum of 0.5 times Line (32) | | | | | |
| **(35)** | **Total Market Risk** | **Not Applicable for 2004 Life RBC** | | | | | |

† The factors are decreased by one-third if the company submits an unqualified actuarial opinion **based on asset adequacy testing**. The diskette automatically recalculates the factor, depending on the answer to Line (1.1).
‡ Net of reinsurance, less policy loans, plus modified coinsurance assumed reserves, less modified coinsurance ceded reserves. Include "base amounts" for unitized separate account business with guarantees provided via guaranteed living benefits, as applicable per the instructions.
§ Excluding any non-policyholder reserves (e.g., reserves that are not related to specific policies).
* Excluding GICs within 1 year of maturity.
£ Includes GICs within 1 year of maturity subtracted elsewhere.

Denotes items that must be manually entered on the filing software.

**EXEMPTION TEST: CASH FLOW TESTING FOR C-3 RBC**

| | C-3 Significance Test | Source | (1) Amount | (2) Yes/No Response |
|---|---|---|---|---|
| (1) | C-0 Asset Risk - Affiliated Amounts | LR027 Calculation of Total Authorized Control Level Capital Column (1) Line (11) | | |
| (2) | C-1cs Asset Risk - Unaffiliated Common Stock | LR027 Calculation of Total Authorized Control Level Capital Column (1) Line (20) | | |
| (3) | C-1o Asset Risk - All Other | LR027 Calculation of Total Authorized Control Level Capital Column (1) Line (42) | | |
| (4) | C-2 Insurance Risk | LR027 Calculation of Total Authorized Control Level Risk-Based Capital Column (1) Line (49) | | |
| (5) | C-3a Factor-Based Interest Rate Risk Single Premium and Annuity Reserves **(Excluding Equity Indexed Annuities)** | LR023 Interest Rate Risk Column (3) Line (17) x 0.65 + LR023 Interest Rate Risk Column (3) Line (16) x 0.65 | | |
| (6) | C-3a Factor-Based Interest Rate Risk All Other Reserves | LR023 Interest Rate Risk [Column (3) Line (22) + (27) + (29)+ (30) + (31)] x 0.65 | | |
| (7) | C-3b Health Credit Risk | LR027 Calculation of Total Authorized Control Level Risk-Based Capital Column (1) Line (55) | | |
| **(8)** | **C-3c Market Risk** | **LR027 Calculation of Total Authorized Control Level Risk-Based Capital Column (1) Line (58)** | | |
| **(9)** | C-4a Business Risk: Premium and Liability Components | LR027 Calculation of Total Authorized Control Level Risk-Based Capital Column (1) Line **63**) | | |
| **(10)** | C-4b Business Risk: Health Administrative Risk | LR027 Calculation of Total Authorized Control Level Risk-Based Capital Column (1) Line **66**) | | |
| **(11)** | Total | Sum of Lines (1) through (**10**) | | |
| **(12)** | C-3a Factor-Based Interest Rate Risk | Line (5) + Line (6) | | |
| **(13)** | C-3a Percentage | Line (**12**) divided by Line (**11**) | | |
| **(14)** | Is Line (**13**) greater than 40 percent? (Complete cash flow testing for C-3 RBC on Page LR023 Interest Rate Risk Column (3) Line (33) if "Yes".) | "Yes" or "No" in Column (**2**) | | |
| | C-3 Stress Test | | | |
| **(15)** | Total Adjusted Capital | LR029 Calculation of Total Adjusted Capital Column (2) Line (10) | | |
| **(16)** | C-3a Factor-Based Interest Rate Risk Single Premium and Annuity Reserves **(Excluding Equity Indexed Annuities)** | LR023 Interest Rate Risk Column (3) Line (17) x 0.65 + LR023 Interest Rate Risk Column (3) Line (16) x 0.65 | | |
| **(17)** | 6.5 Times C-3a Factor-Based Interest Rate Risk Single Premium and Annuity Reserves | LR023 Interest Rate Risk Column (3) Line (17) x 6.5 x 0.65 | | |
| **(18)** | C-3a Factor-Based Interest Rate Risk All Other Reserves | LR023 Interest Rate Risk [Column (3) Line (22) + (27) + (29) + (30) + (31)] x 0.65 | | |
| **(19)** | Adjusted C-3a Factor-Based Interest Rate Risk | Line (**16**) + Line (**17**) + Line (**18**) | | |
| (20) | RBC After Covariance with Line (18) in C-3a Formula | Line (1) + Line (**9**) + Square Root of [(Line (3) + Line (**19**))$^2$ + Line (2 )$^2$ + Line (4)$^2$ + Line (7)$^2$ **+ Line (8)$^2$** + Line (**10**)$^2$] | | |
| (21) | Total | Line (**15**) / Line (20) | | |
| (22) | Is Line (21) less than 100 percent and not equal to zero? (Complete cash flow testing for C-3 RBC on Page LR023 Interest Rate Risk Column (3) Line (33) if "Yes".) | "Yes" or "No" in Column (**2**) | | |

Denotes items that must be manually entered on the filing software.