

**ACTUARIAL GUIDELINE XXXVIII**  
**THE APPLICATION OF THE VALUATION OF LIFE INSURANCE POLICIES**  
**MODEL REGULATION (“MODEL 830”)**

Introduction

The revised version of ~~the~~ Model 830 was adopted by the NAIC in March 1999. Since that date, some questions have been raised regarding whether and how ~~the~~ Model 830 applies to various product designs. The purpose of this guideline is to provide direction as to the application of ~~the~~ Model 830 to such products. Specifically, this guideline provides examples of various policy features that constitute “guarantees” and gives directions on how to reserve for these guarantees in accordance with ~~the~~ Model 830.

Obviously, new policy designs will emerge subsequent to the development of this document. No statute, regulation, or guideline can anticipate every future product design, and common sense and professional responsibility are needed to assure compliance with both the letter and the spirit of the law. While ~~the~~ Model 830 is a complex regulation, its intent is clear: reserves need to be established for the guarantees provided by a policy. Policy designs which are created to simply disguise those guarantees or exploit a perceived loophole must be reserved in a manner similar to more typical designs with similar guarantees.

Text

The following product designs have been brought to the attention of the NAIC’s Life ~~and Health~~ Actuarial Task Force. The list below specifies reserving approaches which the Task Force regards as being most consistent with the letter and spirit of ~~the~~ Model 830. However, the specified reserving approaches should be modified as needed to comply with the intent of this guideline that similar reserves be established for policy designs that contain similar guarantees.

1. An initial level premium rate is guaranteed for 10 years followed by increased guaranteed premiums for an additional 20 years. However, the company cannot increase premiums after year 10 (i.e., the initial premium continues to be charged) unless some specified event occurs.

The initial reserve segment is 30 years. Since the contract contains provisions that limit the company’s ability to increase premiums, then the initial premium should be treated as guaranteed for the entire 30 year period. It would be contrary to the conservative nature of statutory accounting to treat this policy the same as one in which the ability to raise premiums is unrestricted.

2. A term policy has an illustrated level premium for 30 years, the first 10 of which are guaranteed. Additionally, there is a refund option which provides that a specified refund will be paid if the premium ever increases. The refund must be requested within a limited time (e.g., 30 days) of receiving notice of the increase. Coverage terminates if the option is exercised.

This example differs from the one above in that there is no specified event that has to occur in order for the company to impose a premium increase; however, the company must provide an additional benefit to the policyholder if it exercises this right. Thus the company does not have an unrestricted right to impose an increase after 10 years. If the contract contains provisions that require that additional benefits be provided to the policyholder in the event of a premium increase, even if these benefits are lost if not claimed within a stated time frame, then the initial premiums should be treated as guaranteed for the entire 30 year period. It would be contrary to the conservative nature of statutory accounting to treat this policy the same as one in which the ability to raise premiums does not require that additional benefits be provided. Therefore, the initial segment for this policy is 30 years.

3. An initial level premium rate is guaranteed for 10 years followed by increased guaranteed premiums for an additional 20 years. However, after year 10 the policyholder is protected against premiums being increased above the initial level, with the protection provided by a second company through either reinsurance, a second policy issued to the consumer, or an agreement between the companies.

The combined reserves of the direct writer and the second company should be no less than the amount which the direct writer would hold if a) there were no second company and b) the initial reserve segment were 30 years. If this

condition is not met, reserve credits for the direct writer should be disallowed. The reserve held by the direct writer should be based on the initial level premium being guaranteed for 30 years.

4. A product has relatively high gross premiums but with a guaranteed dividend or guaranteed refund schedule, or by some other means guarantees a low net cost to the policyholder.

The net amount of premium (i.e., gross premium less dividends or refunds) should be used in the reserve calculation. That represents the amount the insured actually pays for coverage.

For products reinsured on either a coinsurance or modified coinsurance basis, the reinsurer's reserve calculation should also be based on the net premium (i.e., gross premiums less dividends or refunds guaranteed to be paid to the policyholder).

5. a) A re-entry term product has an initial rate guarantee for 10 years, with loose or non-existent re-entry underwriting, allowing the policyholder to re-enter for an additional 20 years at specified favorable rates. b) A universal life policy has provisions such that, if the UL policy lapses prior to the 10th policy anniversary because the actual accumulation value (or cash value, depending on design) falls below zero but stipulated premiums have been paid, a substitute policy is guaranteed to be issued providing the same amount of insurance coverage at the same stipulated premium for the remainder of the 10-year period plus an additional 20 years.

The reentry periods and premiums should be treated as a continuation of the initial guarantees for reserve calculation purposes. The initial reserve segment applicable to the original policy should be 30 years if the stipulated premium for the substitute policy is not high enough to trigger a new reserve segment. When the substitute policy is issued, reserves should be determined as if the coverage had been issued at the issue age and issue date of the original policy. Effectively, the company has guaranteed coverage for 30 years at the time the initial policy is issued, and the reserves established should reflect that guarantee.

6. A reinsurance treaty provides for 30 years of level premiums on a current scale but directly guarantees those premiums for only the first 10 years. However, if the reinsurer increases the premiums after 10 years, the reinsurer agrees to increase the expense allowance such that the net payments (premium minus allowance) by the direct writer remains unchanged.

Relative to the reinsurer's reserve calculation, the initial reserve segment should be 30 years and the valuation premium should be level over that period. In this instance, the additional "expense allowance" has no relationship to the expenses actually incurred by the direct writer in administering the reinsured policies. Although a bona fide expense allowance would typically not be considered in determining the valuation premiums and reserve segments, in this instance the additional "expense allowance" has no relationship to the expenses actually incurred by the direct writer in administering the reinsured policies."

7. A universal life policy has a cumulative "premium catch-up provision" in which the coverage is guaranteed to remain in force as long as a stipulated premium is paid each year, and if the insured is paying less than is required to maintain the guarantee, there is an unlimited right to make up past premium deficiencies.

~~XXX~~Model 830 requires that "when a policy contains more than one secondary guarantee, the minimum reserve shall be the greatest of the respective minimum reserves at that valuation date of each unexpired secondary guarantee, ignoring all other secondary guarantees." Since secondary guarantees with "catch-up" provisions are capable of being reinstated up to the end of the secondary guarantee period, they constitute "unexpired secondary guarantees" which must be incorporated into the calculation of "the greatest of the respective minimum reserves at that valuation date of each unexpired secondary guarantee, ignoring all other secondary guarantees."

The basic and deficiency reserves for a secondary guarantee with a catch-up provision should be computed as if the stipulated premium requirement had been met. The basic reserve shall be reduced by the product of a) the "catch-up amount," if any, which would be required on the valuation date and b) the ratio of the "initial" (i.e., before adjustment) basic reserve to the sum of the "initial" basic and deficiency reserves. In no event shall the "reduced" basic reserve be reduced below zero. The deficiency reserve shall be reduced by the product of a) the "catch-up amount," if any, which would be required on the valuation date and b) the ratio of the "initial" deficiency reserve to the sum of the "initial" basic and deficiency reserves. In no event shall the "reduced" deficiency reserve be reduced below zero.

If a universal life policy with a “premium catch up provision” has a shadow account below the level necessary to maintain the secondary guarantee, then the reserve for the secondary guarantee shall be valued according to this example. The basic and deficiency reserves, before deduction for the catch-up amount, shall be calculated as specified in [Example #8 Sections 8A, 8B, 8C, or 8E, as applicable.](#)

- 8A. For policies and certificates issued prior to July 1, 2005: A universal life policy guarantees the coverage to remain in force as long as the accumulation of premiums paid satisfies the secondary guarantee requirement.

First, the minimum gross premiums (determined at issue) that will satisfy the secondary guarantee requirement must be derived.

Second, for purposes of applying Sections 7B and 7C of ~~the~~ [Model 830](#), the “specified premiums” are the minimum gross premiums derived in “Step One.”

Third, a determination should be made of the amount of actual premium payments in excess of the minimum gross premiums. For policies utilizing shadow accounts, this will be the amount of the shadow account. For policies with no shadow accounts but which specify cumulative premium requirements, this excess will be the amount of the cumulative premiums paid in excess of the cumulative premium requirements; the cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee).

Fourth, a determination should be made of the single payment necessary at the valuation date to fully fund the remaining secondary guarantee assuming that the minimum gross premiums have been paid, up through the valuation date, during the secondary guarantee period. The result from “Step Three” should be divided by this number.

Fifth, compute the net single premium on the valuation date for the coverage provided by the secondary guarantee for the remainder of the secondary guarantee period, using any valuation table and select factors authorized in Section 5A of ~~the~~ [Model 830](#).

Sixth, the “net amount of additional premiums” is determined by multiplying the ratio from “Step Four” by the difference between the net single premium from “Step Five” and the basic and deficiency reserve, if any, computed in “Step Two.”

Seventh, a “reduced deficiency reserve” should be computed by multiplying the deficiency reserve, if any, by the one minus the ratio from “Step Four,” but not less than zero. This “reduced deficiency reserve” is the deficiency reserve to be used for purposes of Section 7D(1) [of Model 830](#).

Eighth, the actual reserve used for purposes of Section 7D(1) [of Model 830](#) is the lesser of: (1) the net single premium from “Step Five,” and (2) the amount of the excess from “Step Six” plus the basic reserve and the deficiency reserve, if any, computed in “Step Two.” Reduce this result by the applicable policy surrender charges, i.e., the account value less the cash surrender value. If the resulting amount is less than the sum of the basic and deficiency reserve from Step #2, then the basic and deficiency reserves to be used for the purposes of Section 7D(1) are those calculated in Step #2, and no further calculation is required.

Ninth, an “increased basic reserve” should be computed by subtracting the “reduced deficiency reserve” in “Step Seven” from the reserve computed in “Step Eight.” This “increased basic reserve” is the basic reserve to be used for purposes of Section 7D(1) [of Model 830](#).

- 8B. For policies and certificates issued on or after July 1, 2005 and on or prior to December 31, 2006 ~~and on or after January 1, 2014~~: A universal life policy guarantees the coverage to remain in force as long as the accumulation of premiums paid satisfies the secondary guarantee requirement.

First, the minimum gross premiums (determined at issue) that will satisfy the secondary guarantee requirement must be derived.

Second, for purposes of applying Sections 7B and 7C of ~~the~~ [Model 830](#), the “specified premiums” are the minimum gross premiums derived in “Step One.” Consistent with ~~the~~ [Model 830](#), the remaining steps in this guideline should

be calculated on a segmented basis, using the segments that ~~the~~ Model 830 defines for the product. Therefore, in the remaining steps, the term “fully fund the guarantee” should be interpreted to mean fully funding the guarantee to the end of each possible segment. The term “remainder of the secondary guarantee period” should be interpreted to mean the remainder of each possible segment. The total reserve should equal the greatest of all possible segmented reserves.

Third, a determination should be made of the amount of actual premium payments in excess of the minimum gross premiums. For policies utilizing shadow accounts, this will be the amount of the shadow account. For policies with no shadow accounts but which specify cumulative premium requirements, this excess will be the amount of the cumulative premiums paid in excess of the cumulative premium requirements; the cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee).

Fourth, as of the valuation date for the policy being valued, for policies utilizing shadow accounts, determine the minimum amount of shadow account required to fully fund the guarantee. For policies with no shadow accounts but which specify cumulative premium requirements, determine the amount of the cumulative premiums paid in excess of the cumulative premium requirements that would result in no future premium requirements to fully fund the guarantee; the cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee). For any policy for which the secondary guarantee can not be fully funded in advance, solve for the minimum sum of any possible excess funding (either the amount in the shadow account or excess cumulative premium payments depending on the product design) and the present value of future premiums (using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves) that would fully fund the guarantee. The amount determined above for this step is to then be divided by one minus a seven percent premium load allowance (0.93). The result from “Step Three” should be divided by this number, with the resulting ratio capped at 1. The ratio is intended to measure the level of prefunding for a secondary guarantee which is used to establish reserves. Assumptions within the numerator and denominator of the ratio therefore must be consistent in order to appropriately reflect the level of prefunding. The denominator is allowed to be inconsistent only by the amount of the premium load allowance as defined in this step. As used here, “assumptions” include any factor or value, whether assumed or known, which is used to calculate the numerator or denominator of the ratio.

[DRAFTING NOTE: The 7% premium load allowance approximates an average premium load level as evidenced by policies currently sold in the market. Rather than have the funding ratio vary according to the actual policy loads (which can fluctuate greatly by company and product), all companies will use an identical premium load allowance at a level approximately equal to the current industry average.]

Fifth, compute the net single premium on the valuation date for the coverage provided by the secondary guarantee for the remainder of the secondary guarantee period, using any valuation table and select factors authorized in Section 5A of ~~the~~ Model 830.

Sixth, the “net amount of additional premiums” is determined by multiplying the ratio from “Step Four” by the difference between the net single premium from “Step Five” and the basic and deficiency reserve, if any, computed in “Step Two.”

Seventh, a “reduced deficiency reserve” should be computed by multiplying the deficiency reserve, if any, by the one minus the ratio from “Step Four,” but not less than zero. This “reduced deficiency reserve” is the deficiency reserve to be used for purposes of Section 7D(1) of Model 830.

Eighth, the actual reserve used for purposes of Section 7D(1) of Model 830 is the lesser of: (1) the net single premium from “Step Five,” and (2) the amount of the excess from “Step Six” plus the basic reserve and the deficiency reserve, if any, computed in “Step Two.” Reduce this result by the applicable policy surrender charges, i.e., the account value less the cash surrender value. Multiply this surrender charge by the ratio of the net level premium for the secondary guarantee period divided by the net level premium for whole life insurance. Calculate both net premiums using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves. However, if no future premiums are required to support the guarantee period being valued, there is no reduction for surrender charges. If the resulting amount is less than the sum of the basic and deficiency reserve from Step #2, then the basic and deficiency reserves to be used for the purposes of Section 7D(1) of Model 830 are those calculated in Step #2, and no further calculation is required.

Ninth, an “increased basic reserve” should be computed by subtracting the “reduced deficiency reserve” in “Step Seven” from the reserve computed in “Step Eight.” This “increased basic reserve” is the basic reserve to be used for purposes of Section 7D(1) of Model 830.

- 8C. For all policies and certificates issued on or after January 1, 2007 and on or prior to December 31, 2013<sup>2</sup>: A universal life policy guarantees the coverage to remain in force as long as the accumulation of premiums paid satisfies the secondary guarantee requirement.

First, the minimum gross premiums (determined at issue) that will satisfy the secondary guarantee requirement must be derived.

Second, for purposes of applying Sections 7B and 7C of ~~the~~ Model 830, the “specified premiums” are the minimum gross premiums derived in “Step One.” Consistent with ~~the~~ Model 830, the remaining steps in this guideline should be calculated on a segmented basis, using the segments that the Model defines for the product. Therefore, in the remaining steps, the term “fully fund the guarantee” should be interpreted to mean fully funding the guarantee to the end of each possible segment. The term “remainder of the secondary guarantee period” should be interpreted to mean the remainder of each possible segment. The total reserve should equal the greatest of all possible segmented reserves. Additionally, for purposes of applying Sections 7B and 7C of ~~the~~ Model 830, a lapse rate of no more than 2% per year for the first 5 years, followed by no more than 1% per year to the policy anniversary specified in the following table based on issue age, and 0% per year thereafter may be used. If the duration in the table is less than 5, than a lapse rate of no more than 2% per year may be used through that duration, and 0% per year thereafter.

Issue Age	Duration
0-50	30 <sup>th</sup> policy anniversary
51 - 60	Policy Anniversary age 80
61 – 70	20 <sup>th</sup> policy anniversary
71 - 89	Policy anniversary age 90
90 and over	no lapse

Third, a determination should be made of the amount of actual premium payments in excess of the minimum gross premiums. For policies utilizing shadow accounts, this will be the amount of the shadow account. For policies with no shadow accounts but which specify cumulative premium requirements, this excess will be the amount of the cumulative premiums paid in excess of the cumulative premium requirements; the cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee).

Fourth, as of the valuation date for the policy being valued, for policies utilizing shadow accounts, determine the minimum amount of shadow account required to fully fund the guarantee. For policies with no shadow accounts but which specify cumulative premium requirements, determine the amount of the cumulative premiums paid in excess of the cumulative premium requirements that would result in no future premium requirements to fully fund the guarantee; the cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee). For any policy for which the secondary guarantee can not be fully funded in advance, solve for the minimum sum of any possible excess funding (either the amount in the shadow account or excess cumulative premium payments depending on the product design) and the present value of future premiums (using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves) that would fully fund the guarantee. The amount determined above for this step is to then be divided by one minus a seven percent premium load allowance (0.93). The result from “Step Three” should be divided by this number, with the resulting ratio capped at 1. The ratio is intended to measure the level of prefunding for a secondary guarantee which is used to establish reserves. Assumptions within the numerator and denominator of the ratio therefore must be consistent in order to appropriately reflect the level of prefunding. The denominator is allowed to be inconsistent only by the amount of the premium load allowance as defined in this step. As used here, “assumptions” include any factor or value, whether assumed or known, which is used to calculate the numerator or denominator of the ratio.

[DRAFTING NOTE: The 7% premium load allowance approximates an average premium load level as evidenced by policies currently sold in the market. Rather than have the funding ratio vary according to the actual policy loads

(which can fluctuate greatly by company and product), all companies will use an identical premium load allowance at a level approximately equal to the current industry average.]

Fifth, compute the net single premium on the valuation date for the coverage provided by the secondary guarantee for the remainder of the secondary guarantee period, using any valuation table and select factors authorized in Section 5A of ~~the~~ Model 830. For purposes of calculating the net single premium, a lapse rate subject to the same criteria as the lapse rate used in applying Step 2 of 8C above may be used.

Sixth, the “net amount of additional premiums” is determined by multiplying the ratio from “Step Four” by the difference between the net single premium from “Step Five” and the basic and deficiency reserve, if any, computed in “Step Two.”

Seventh, a “reduced deficiency reserve” should be computed by multiplying the deficiency reserve, if any, by the one minus the ratio from “Step Four,” but not less than zero. This “reduced deficiency reserve” is the deficiency reserve to be used for purposes of Section 7D(1) of Model 830.

Eighth, the actual reserve used for purposes of Section 7D(1) of Model 830 is the lesser of: (1) the net single premium from “Step Five,” and (2) the amount of the excess from “Step Six” plus the basic reserve and the deficiency reserve, if any, computed in “Step Two.” Reduce this result by the applicable policy surrender charges, i.e., the account value less the cash surrender value. Multiply this surrender charge by the ratio of the net level premium for the secondary guarantee period divided by the net level premium for whole life insurance. Calculate both net premiums using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves. If the resulting amount is less than the sum of the basic and deficiency reserve from Step #2, then the basic and deficiency reserves to be used for the purposes of Section 7D(1) of Model 830 are those calculated in Step #2, and no further calculation is required.

Ninth, an “increased basic reserve” should be computed by subtracting the “reduced deficiency reserve” in “Step Seven” from the reserve computed in “Step Eight.” This “increased basic reserve” is the basic reserve to be used for purposes of Section 7D(1) of Model 830.

Business reserved pursuant to Section 8C must be supported by an asset adequacy analysis specific to this business. This asset adequacy analysis must be performed pursuant to the requirements of Section 3 of the Standard Valuation Law. Reserves required by Section 8C shall be increased by any additional reserves required by the asset adequacy analysis.

8D. This Section 8D applies to policies and certificates (1) issued on and after July 1, 2005, (2) issued prior to January 1, 2013, and (3) in force on December 31, 2012, or on any valuation date thereafter: Under a universal life policy with a secondary guarantee, the coverage is guaranteed to remain in force as long as the accumulation of premiums paid satisfies the secondary guarantee requirement.

Notwithstanding the requirements of any of the other sections of this Actuarial Guideline (and in addition to any testing that may be required under Section 8C), this Section 8D describes the reserving requirements with respect to universal life with secondary guarantee products, with or without a shadow account, with multiple sets of interest rate or other credits, or multiple sets of cost of insurance, expense, or other charges that may become applicable to the calculation of the secondary guarantee measures in any one policy year. This Section 8D does not apply if the minimum gross premiums for the policies are determined by applying the set of charges and credits that produces the lowest premiums, regardless of the imposition of constraints, contingencies, or conditions that would otherwise limit the application of those credits and charges. The requirements of this Section 8D apply to a company on December 31, 2012, and on any subsequent valuation date if (1) on the applicable date, the in force face amount (direct plus assumed) of universal life insurance to which this Section 8D would otherwise apply exceeds 2% of the company’s face amount of individual permanent life insurance in force, or (2) on the applicable date, the company’s face amount of insurance in force subject to this Section 8D exceeds \$1,000,000,000 (One Billion Dollars). Any company otherwise meeting these criteria may seek an exemption to the requirements under this Section 8D by filing an exemption request with its state of domicile, which will provide a copy of the request to the NAIC Financial Analysis (E) Working Group (“FAWG”). If the state of domicile agrees with the exemption request, then the requirements of this Section 8D do not apply to such company, provided FAWG does not conclude that the exemption would allow the company to use a reserving methodology that is not appropriate in relation to the benefits and the pattern of premiums for the plans covered.

a. Primary Reserve Methodology

The company's aggregate gross reserve before reinsurance for the business subject to this Section 8D to be reported in the December 31, 2012, and subsequent annual statutory financial statements of the company will be the aggregate reserve under 1 below, plus any excess of the aggregate reserve determined as defined in 2 below, over 1:

1. The basic and deficiency reserve as of the valuation date determined by the company according to the reserve methodology and assumptions used by the company for the statutorily-reported reserve for the business subject to this Section 8D as of December 31, 2011.
2. The reserve amount as of the valuation date determined according to the same requirements for determining the deterministic reserve in the version of the valuation manual specified under Section 11 of the Standard Valuation Law ("Model 820") and adopted by NAIC Life Insurance and Annuities (A) Committee on August 17, 2012, or in any version subsequently adopted by the NAIC as of the July 1 preceding the valuation date ("Valuation Manual"), but with the two modifications identified below, determined as follows:

a) First, future year-by-year cash flows for the block of business subject to this Section 8D are projected as of the valuation date. In making this projection:

- (I) the projected net investment earnings from the starting assets shall be the lesser of (i) the actual portfolio net investment returns and (ii) net investment returns based on a portfolio of A-rated corporate bonds purchased in the year of issue of the policies based on yields available in the year of issue for those bonds.
- (II) the projected net investment rate for the reinvestment assets shall be the lesser of (i) the average over a period of 12 months, ending on the June 30 prior to the valuation date, of the monthly average of the composite yield on seasoned corporate bonds, as published by Moody's Investor Services, Inc. and (ii) 7% per annum.

b) Second, future year-by-year net investment returns are determined from the cash flows generated in a).

c) Third, the reserve for the policies is computed using the year-by-year net investment returns determined in b) to discount the cash flows applicable to those policies.

The company may calculate the reserves as of any December 31 as of a date no earlier than three months before that December 31 valuation date, using relevant company data, provided an appropriate method is used to adjust those reserves to the valuation date.

If the aggregate reserve determined pursuant to the second calculation above exceeds the aggregate reserve determined pursuant to the first calculation, the additional reserve to be held is deemed to be required pursuant to Model 820, Sections 3 and 6, which provide for an analysis of reserves pursuant to an asset adequacy analysis with margins for moderately adverse assumptions. Any such excess shall be allocated to each policy in proportion to the step 1 reserve for that policy.

b. Alternative Reserve Methodology

The requirements of subsection a. above shall not apply to a company that holds a total gross reserve amount, before reinsurance, for the business subject to this Section 8D at least equal to the total reserve determined in accordance with the November 1, 2011 Life Actuarial (A) Task Force Statement on Actuarial Guideline XXXVIII, except that for purposes of determining any deficiency reserves under Model 830, using mortality and lapse assumptions according to the same requirements for determining the deterministic reserve in the Valuation Manual.

c. Documentation and Reporting

Under the direction of one or more qualified actuaries, the company shall prepare a stand-alone Actuarial Memorandum covering the reserve analysis performed on the business described in this Section 8D in compliance with Section 7 of the Actuarial Opinion and Memorandum Regulation ("Model 822") to document the assumptions, analyses and results of the reserve calculations described above. The Actuarial Memorandum shall be prepared

regardless of whether the company used the Primary Reserve Methodology described in Section 8D.a or the Alternative Reserve Methodology described in Section 8D.b. Documentation in the submitted Actuarial Memorandum must be sufficient for another actuary qualified in the same practice area to evaluate the assumptions, analyses and results, and to enable regulatory review and verification that the assumptions, analyses and results satisfy the requirements described above, as they relate to the company. In the event that the Valuation Manual is incomplete or unclear as to any matter, the actuary preparing the Actuarial Memorandum shall use his or her best judgment in applying the requirements of the Valuation Manual and shall document his or her decisions in the Actuarial Memorandum. For any business subject to this Section 8D that has been ceded by the company, the Actuarial Memorandum shall provide a listing of the assuming companies with face amount, reserve credit taken, and form of reinsurance for such business. The Actuarial Memorandum shall be submitted to the state of domicile of the company by the April 30 following the valuation date. The state of domicile shall provide a copy of the Actuarial Memorandum to FAWG and, upon request, to any other state in which the company is licensed.

For those companies that used the Primary Reserve Methodology described above, the Actuarial Memorandum shall also provide with respect to the business subject to this Section 8D a description of the simplifications, approximations and modeling efficiency (aggregation) techniques used to calculate the reserve amount set forth in Subsection 2 of the Primary Reserve Methodology (i.e., Section 8D.a.2) and a clear indication that, upon request, information may be obtained that is adequate to permit the audit of any subgroup of the aggregated reserve amounts to ensure that the total of the seriatim (policy-by-policy) reserve calculations produces a reserve not materially different than the aggregated reserve amount determined pursuant to Subsection 2 of the Primary Reserve Methodology (i.e., Section 8D.a.2).

Along with the filing of the Actuarial Memorandum pertaining to the December 31, 2012 valuation date, those companies using the Primary Reserve Methodology above shall also submit a report to its state of domicile indicating what the gross reserve before reinsurance for the business subject to this Section 8D would be as of December 31, 2012 if the reserve had been determined pursuant to the methodology and experience assumptions used to determine the reserve set forth in Subsection 2 of the Primary Reserve Methodology (i.e., Section 8D.a.2), except using a net reinvestment return rate assumption not greater than the maximum valuation interest rate for the year of issue of each policy set forth in Model 820. The company shall include in this report what its (i) total adjusted capital and (ii) company action level risk based capital would be if the company held the reserve calculated pursuant to this methodology rather than the reserve actually reported for the applicable business in the annual statement submitted by the company to the NAIC. The report described in this paragraph will be provided by the company to the state of domicile, which will forward a copy to FAWG. Upon request, the state of domicile will also forward a copy of this report to any other state in which the company is licensed. The state of domicile, FAWG, and any other state receiving the report will treat it as containing confidential information. The report is to be provided for informational purposes only, and it is to be considered and used as one additional piece of information to be evaluated in the context of the company's overall financial position.

The domestic state will perform a review of the Actuarial Memorandum in consultation with FAWG to ensure the company's reserve calculations have been performed according to the requirements of this Section 8D.

If:

- the company reports in its financial statements the reserve level required above, adjusted for any phase-in period approved by the company's state of domicile, and
- the company complies with any applicable phase-in period made by the state of domicile with respect to such additional reserves, and
- FAWG agrees with the state of domicile's decisions.

FAWG shall issue a confidential report to non-domiciliary states indicating that the company's reserving methodology is appropriate in relation to the benefits and the pattern of premiums for the plans covered. If FAWG does not agree with the state of domicile's decisions, FAWG shall issue a confidential report to non-domiciliary states indicating that the company's reserving methodology is not appropriate in relation to the benefits and the pattern of premiums for the plans covered.

8E. For policies and certificates issued on or after January 1, 2013: For a universal life policy that guarantees the coverage to remain in force as long as the accumulation of premiums paid satisfies the secondary guarantee requirement.

Step 1: The first step is to derive the minimum gross premiums for the policy or certificate (to be determined at issue). Except as indicated for policies and certificates described in Method I Policy Design # 3 (described below), the minimum premiums so derived must satisfy the secondary guarantee requirement. Model 830, Section 7A4, does not apply in determining the minimum gross premiums for policies and certificates described in this Section 8E.

D) Methodology for determining the minimum gross premiums for certain designs (“Method I”):

1. Policy Design # 1: For a policy containing a secondary guarantee that uses a shadow account with a single set of charges and credits, the minimum gross premium for any policy year is the premium that, when paid into a policy with a zero shadow account value at the beginning of the policy year, produces a zero shadow account value at the end of the policy year, using the guaranteed shadow account charges and credits (e.g., interest credited rate, mortality charges, premium loads and expense charges) specified under the secondary guarantee.
2. Policy Design # 2: For a policy that compares paid accumulated premiums to minimum required accumulated premiums (cumulative premium policy), with both accumulations based on a single set of charges and credits specified under the secondary guarantee, the minimum gross premium for any policy year is the premium that, when paid into a policy for which the accumulated premiums equals the minimum required accumulated premiums at the beginning of the policy year, results in the paid accumulated premiums being equal to the minimum required accumulated premiums at the end of the policy year.
3. Policy Design # 3: If, for any policy year, a shadow account secondary guarantee, a cumulative premium secondary guarantee design, or other secondary guarantee design, provides for multiple sets of charges and / or credits, then the minimum gross premiums shall be determined by applying the set of charges and credits in that policy year that produces the lowest premiums, ignoring the constraint that such minimum premiums satisfy the secondary guarantee requirement and ignoring any contingencies or conditions that would otherwise limit the application of those charges and credits.

Notwithstanding the language in the approaches described above, the guaranteed (including conditionally guaranteed) policy credits for each year shall be limited as to magnitude in order for minimum gross premiums to be determined consistent with any of the policy designs above. The limitations must be met at the time of each product filing and also when guaranteed credits or charges for each such product are revised. For this purpose, policy credits based on the interest or accumulation rates in the policy shall not exceed the “Index” (defined in the next sentence) plus 3% per annum. The Index used to establish the limitation as to magnitude shall be either (i) the monthly average of the composite yield on seasoned corporate bonds as published by Moody’s Investors Service, Inc. for the month immediately preceding the date of the Actuarial Opinion required under this Section 8E and described below, or (ii) the monthly average over a period of twelve months, ending on the June 30 preceding the date of the Actuarial Opinion required below, of the composite yield on seasoned corporate bonds, as published by Moody’s Investors Service, Inc. The averaging period chosen by the company must be elected at time of product filing and consistently used for that product thereafter even if guaranteed credits or charges are subsequently revised for that product.

II) Methodology for determining the minimum gross premiums for other designs (“Method II”):

Unless otherwise provided in this Section 8E, the minimum gross premiums shall be the lowest schedule of premiums that keep the policy in force over the life of the secondary guarantee period and that produce the greatest deficiency reserve at issue. If deficiency reserves produced at issue are all zero, then the smallest absolute value of the difference between “quantity A” set forth in Model 830, Section 5B, over the basic reserve shall be considered the greatest deficiency reserve. For purposes of this Step 1, in deriving the deficiency reserve associated with a particular schedule of gross premiums, the X factors used shall be set equal to 1 for all durations, issue ages, and risk classes.

For policies that use a shadow account, and for cumulative premium policies, the schedule of premiums that keep the policy in force over the life of the secondary guarantee period and that produce the greatest deficiency reserve at issue shall be determined assuming the following premium-paying patterns for premiums actually paid under the policy:

- Level premiums for the life of the secondary guarantee but not beyond the duration that premiums may be paid under the policy, and
- Increasing premiums over the life of the secondary guarantee (including any resulting reserve segments created), but not beyond the durations that premiums may be paid under the policy and,
- Combinations of the above premium patterns including higher initial premiums for funding levels to have access to better charges and credits with combinations of level and increasing premium patterns thereafter.

For all policies and certificates subject to this Step 1 of Method II of this Section 8E, the company shall also perform a good faith high-level analytical review of the product design with respect to the premium payment patterns to be expected with respect to that design. The review should consider whether there are situations whereby the product design is likely to elicit a pattern of premium payments that, if paid, would provide the insured with access to lower charges and/or higher credits than those that would apply assuming the premium paying patterns required to be tested under this Section 8E and thereby result in the need for a deficiency reserve significantly in excess of that determined using the schedules of minimum gross premiums determined pursuant to the premium payment patterns required to be tested under this Section 8E. To the extent identified, the company shall use such other premium payment patterns it determines are likely to result in the need for a greater deficiency reserve than implied by the premium payment patterns required to be tested under this Section 8E in determining the schedule of minimum gross premiums and related deficiency reserve. In performing this analytic review, the company shall consider payment patterns which keep the policy in force over the lifetime of the secondary guarantee.

Step 2: For purposes of applying Sections 7B and 7C of Model 830, the “specified premiums” are the minimum gross premiums derived in Step 1. Consistent with Model 830, the remaining steps in this guideline should be calculated on a segmented basis, using the segments that Model 830 defines for the product. Therefore, in the remaining steps, the term “fully fund the guarantee” should be interpreted to mean fully funding the guarantee to the end of each possible segment. The term “remainder of the secondary guarantee period” should be interpreted to mean the remainder of each possible segment. The total reserve should equal the greatest of all possible segmented reserves. Additionally, for purposes of applying Sections 7B and 7C of Model 830, the lapse rate used shall be no more than 2% per year for the first 5 years, followed by no more than 1% per year to the policy anniversary specified in the following table based on issue age, and 0% per year thereafter. If the duration in the table is less than 5, than a lapse rate of no more than 2% per year may be used through that duration, and 0% per year thereafter.

<u>Issue Age</u>	<u>Duration</u>
<u>0-50</u>	<u>30<sup>th</sup> policy anniversary</u>
<u>51 - 60</u>	<u>Policy Anniversary age 80</u>
<u>61 – 70</u>	<u>20<sup>th</sup> policy anniversary</u>
<u>71 – 89</u>	<u>Policy anniversary age 90</u>
<u>90 and over</u>	<u>no lapse</u>

Step 3: A determination should be made of the amount of actual premium payments greater than or less than the minimum gross premiums. For policies using shadow accounts and qualifying under one of the Policy Designs of Method I, this will be the amount of the shadow account. For policies using shadow accounts whose minimum gross premium is determined under Method II, this will be the amount of the shadow account minus the amount that would be in the shadow account if the minimum gross premiums used to calculate basic and deficiency reserves in Step 2 were paid. This result may be negative. For cumulative premium policies whose minimum gross premiums are determined under Method I, this excess will be the amount of cumulative premiums paid over the cumulative premium requirements. For cumulative premium policies whose minimum gross premiums are determined under Method II, this excess will be the amount of the cumulative premiums paid minus the cumulative premium using the minimum gross premiums used to calculate basic and deficiency reserves in Step 2. This result may be negative. The cumulative premium payments and requirements should include any interest credited under the secondary guarantee (with interest credited at the rate specified under the secondary guarantee).

Step 4: As of the valuation date for the policy being valued, for policies using shadow accounts, determine the minimum amount of shadow account required to fully fund the guarantee. For cumulative premium policies, determine the minimum amount of the cumulative premiums required to fully fund the guarantee less the cumulative premium requirements. For any policy for which the secondary guarantee cannot be fully funded in advance, solve for the minimum sum of any possible excess funding (either the amount in the shadow account or excess cumulative

premium payments depending on the product design) and the present value of future premiums (using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves) that would fully fund the guarantee. For shadow account policies, if the minimum gross premium is determined according to Method II and the Step 3 amount is positive then the amount determined above for this step is reduced by any positive shadow account based on minimum gross premiums. For cumulative premium policies, if the minimum gross premium is determined according to Method II and the Step 3 amount is positive then the amount determined above for this step is reduced by the excess of cumulative premiums, assuming minimum gross premiums are paid, over the cumulative premium requirements. For shadow account policies, if the minimum gross premium is determined according to Method II and the Step 3 amount is negative then the amount determined above for this step is replaced by the amount of the shadow account based on the minimum gross premiums. For cumulative premium policies, if the minimum gross premiums are determined by Method II and the Step 3 amount is negative then the amount determined above for this step is replaced by the excess of cumulative premiums, assuming minimum gross premiums are paid, over the cumulative premium requirements.

The amount determined above for this step is then divided by one minus a seven percent premium load allowance (0.93).

The result from Step 3 should be divided by the number above, with the resulting ratio capped at 1 and no less than (-1). The ratio is intended to measure the level of prefunding for a secondary guarantee and is used to establish reserves. Assumptions within the numerator and denominator of the ratio therefore must be consistent in order to appropriately reflect the level of prefunding. The denominator is allowed to be inconsistent only by the amount of the premium load allowance as defined in this step. As used here, "assumptions" include any factor or value, whether assumed or known, that is used to calculate the numerator or denominator of the ratio.

[DRAFTING NOTE: The 7% premium load allowance approximates an average premium load level as evidenced by policies currently sold in the market. Rather than have the funding ratio vary according to the actual policy loads (which can fluctuate greatly by company and product), all companies will use an identical premium load allowance at this 7% level, which is approximately equal to the current industry average.]

Step 5: Compute the net single premium on the valuation date for the coverage provided by the secondary guarantee for the remainder of the secondary guarantee period, using any valuation table and select factors authorized in Section 5A of Model 830. For purposes of calculating the net single premium, a lapse rate subject to the same criteria as the lapse rate used in applying Step 2 may be used.

Step 6: If the amount in Step 3 is positive the "net amount of additional premiums" is determined by multiplying the ratio from Step 4 by the difference between the net single premium from Step 5 and the basic and deficiency reserve, if any, computed in Step 2.

If the amount in Step 3 is negative, the "net amount of additional premiums" is determined by multiplying the ratio from Step 4 by the basic reserves, if any, computed in Step 2. This result will be negative or zero. Subtract the deficiency reserve calculated in Step 2 from this result and then add the following amount, depending on whether the policy is a shadow account policy or a cumulative premium policy:

a) If a shadow account policy add the following:

The deficiency reserve at issue calculated using X factors associated with the premium paying pattern used in determining the greatest deficiency reserve in Method II, Step 1, multiplied by one minus the ratio of the amount of the shadow account divided by minimum amount in the shadow account that would fully fund the guarantee. This amount in a) is not to be less than zero.

b) If a cumulative premium policy add the following:

The deficiency reserve at issue calculated using X factors associated with the premium paying pattern used in determining the greatest deficiency reserve in Method II, Step 1, multiplied by one minus the ratio of the amount of cumulative premiums paid divided by the minimum amount of cumulative premiums required to fully fund the guarantee. This amount in b) is not to be less than zero.

Step 7: A "reduced deficiency reserve" shall be computed by multiplying the deficiency reserve, if any, by one minus the ratio (such ratio not to be set less than zero) from Step 4; this final amount also not to be set less than

zero. This “reduced deficiency reserve” is the deficiency reserve to be used for purposes of Section 7D(1) of Model 830.

Step 8: The reserve used for purposes of Model 830, Section 7D(1) is as follows:

- a) Take the lesser of:
  - 1) the “net amount of additional premiums” from Step 6 plus the basic reserve and the deficiency reserve, if any, computed in Step 2, and
  - 2) the net single premium from Step 5.
  
- b) Reduce the result in a) by the applicable policy surrender charges (i.e., the account value less the cash surrender value). Multiply this surrender charge by the ratio of the net level premium for the secondary guarantee period divided by the net level premium for whole life insurance. Calculate both net premiums using the maximum allowable valuation interest rate and the minimum mortality standards allowable for calculating basic reserves.
  
- c) Calculate the reserve floor:
  - 1) If the result in Step 3 is negative, then the reserve floor shall equal the sum of the Step 2 basic and deficiency reserves and the amount from Step 6.
  - 2) If the result in Step 3 is not negative, then the reserve floor shall equal the sum of the Step 2 basic and deficiency reserves without any adjustment.

The reserve to be used for purposes of Model 830, Section 7D(1) is the greater of the resulting amount from b) above and reserve floor.

Step 9: An “increased basic reserve” shall be computed by subtracting the “reduced deficiency reserve” in Step 7 from the reserve computed in Step 8. This “increased basic reserve” is the basic reserve to be used for purposes of Model 830, Section 7D(1).

#### Actuarial Opinion and Company Representation Requirements

If a company uses one of the Policy Design methodologies described above in Method I of this Section 8E to determine the minimum gross premiums in Step 1, the company shall submit to its state of domicile at the time of filing/approval of a new product, or by December 31, 2012, for current products that will be issued in 2013 or thereafter, and at any time when rates and/or charges are changed, an Actuarial Opinion signed by the Appointed Actuary and a Representation of the Company signed by a Senior Officer of the company regarding the applicable policy form(s) that states:

Actuarial Opinion

“I, (name and professional designation), am the appointed actuary for (company name). I have examined the actuarial assumptions and actuarial methods used in determining the reserves described herein, and, in my opinion: (1) the product referenced herein meets the definition of Policy Design # \_\_\_\_\_ described in Method I in Section 8E of Actuarial Guideline XXXVIII (“AG38”), (2) notwithstanding the language in Policy Design # \_\_\_\_\_, the guaranteed (including conditionally guaranteed) policy credits in the product available for any year do not exceed the “Index” defined in Method I in Section 8E of AG38 plus 3% per annum, and (3) the minimum gross premiums determined under Policy Design # \_\_\_\_\_ are not inconsistent with the minimum premiums, charges and credits that are expected to apply under the policy.”

(Name of actuary, printed or typed)

(Signature of actuary)

(date signed)

Company Representation

“(company name) hereby represents: (1) that the product referenced herein meets the definition of Policy Design # \_\_\_\_\_ described in Method I in Section 8E of Actuarial Guideline XXXVIII (“AG38”), (2) notwithstanding the language in Policy Design # \_\_\_\_\_, the guaranteed (including conditionally guaranteed) policy credits in the product available for any year do not exceed the “Index” defined in Method I in Section 8E of AG38 plus 3% per annum, and (3) the minimum gross premiums determined under Policy Design # \_\_\_\_\_ are not inconsistent with the minimum premiums, charges and credits that are expected to apply under the policy.”

(Name of company Officer, printed or typed)

(Signature of company Officer)

(date signed)

The state of domicile shall provide a copy of the Actuarial Opinion and the Company Representation to FAWG and, upon request, to any state in which the company plans to issue the policy that is the subject of the Actuarial Opinion and Company Representation.

Policy Design

If a company develops reserves based on Method II of this Section 8E, the company shall submit a report from its Appointed Actuary prior to issuing policies on that form to its state of domicile, which will provide a copy to FAWG and (upon request) to any state in which the company plans to issue the product, that briefly describes the analytical review performed, the company’s conclusions following the analytical review, and whether any additional premium payment patterns other than those required by this Section 8E were tested as a result of the review. If FAWG agrees with the state of domicile’s decisions with respect to the company’s Method II reserving methodology, FAWG shall issue a confidential report to non-domiciliary states indicating that the company’s reserving methodology is appropriate in relation to the benefits and the pattern of premiums for the plans covered. If FAWG does not agree with the state of domicile’s decisions with respect to the company’s Method II reserving methodology, FAWG shall issue a confidential report to non-domiciliary states indicating that the company’s reserving methodology is not appropriate in relation to the benefits and the pattern of premiums for the plans covered.

Effective Date

With the exception of “Step Three” through “Step Nine” of Item #8A and all of Items #8B and #8C, the application of this guideline shall be retroactive to the earlier of a state’s adoption of the revised Model or the statutory accounting practices and procedures as set forth in the NAIC Accounting Practices and Procedures Manual. All of Items #8A, #8B and #8C shall be applicable to policies and certificates issued on or after the later of the date of a state’s adoption of the revised Model and January 1, 2003, subject to the dates specified in Items #8A, #8B and #8C.

With the exception of Steps 3 through Step 9 of Section 8A and all of Sections 8B, 8C, 8D and 8E, the scope of this guideline shall be inclusive of policies issued on and after the earlier of a state’s adoption of the revised Model 830 (adopted by the NAIC in March 1999) or the statutory accounting practices and procedures as set forth in the NAIC Accounting Practices and Procedures

Manual. All of Sections 8A, 8B, 8C, 8D and 8E shall be applicable to policies and certificates issued on or after the later of the date of a state's adoption of the revised Model 830 and January 1, 2003, subject to the dates and/or applicable scope specified in Sections 8A, 8B, 8C, 8D and 8E.