



AMERICAN ACADEMY *of* ACTUARIES

Comments on Draft Actuarial Guideline VL-GMDB To the National Association of Insurance Commissioner's (NAIC) Life and Health Actuarial Task Force (LHATF) Nashville - March, 2001

The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the public information organization for the profession. The Academy is non-partisan and assists the public policy process through the presentation of clear and objective actuarial analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance. The Academy also develops and upholds actuarial standards of conduct, qualification and practice and the Code of Professional Conduct for all actuaries practicing in the United States.

The following materials have been prepared by the Academy's Variable Life Reserve Guideline Work Group of the Committee on State Life Insurance Issues.

Burton D. Jay, F.S.A., M.A.A.A., Chair

Andrew C. Boyer, F.S.A., M.A.A.A.

Thomas A. Campbell, F.S.A., M.A.A.A.

Armand de Palo, F.S.A., M.A.A.A.

Andrew M. Erman, F.S.A., M.A.A.A.

Veeta A. Ewan, F.S.A., M.A.A.A.

Barbara R. Fraser, F.S.A., M.A.A.A.

Larry M. Gorski, F.S.A., M.A.A.A.

Robert Hupf, F.S.A., M.A.A.A.

J. Michael Harrington, F.S.A., M.A.A.A.

Thomas P. Kalmbach, F.S.A., M.A.A.A.

Thomas E. Norton, F.S.A., M.A.A.A.

Donald Pearsall, F.S.A., M.A.A.A.

Stephen R. Peeples, F.S.A., M.A.A.A.

Hal B. Phillips, F.S.A., M.A.A.A.

Joy A. Pillard, F.S.A., M.A.A.A.

Stephen J. Preston, F.S.A., M.A.A.A.

Jeffrey S. Rait, F.S.A., M.A.A.A.

David K. Sandberg, F.S.A., M.A.A.A.

Mary L. Swanson, F.S.A., M.A.A.A.

John M. Weum, F.S.A., M.A.A.A.

Summary

The following report is divided into three sections. The first section is the answers to questions received from the NAIC. Next, is an attachment which compares the 1983 and 1989 versions of the Variable Life Model Regulation. Finally, a redlined version of the draft Guideline is included with the Work Group's recommended changes. The Work Group would like to thank all those involved in the preparation of this report, especially Debra Eckberg.

The Work Group has reviewed comments submitted on draft Actuarial Guideline VL-GMDB and suggests some changes. The changes respond to the questions sent by Mark Peavy of the NAIC on October 27, 2000, comments sent by Jim Jakielo (to Mark Peavy) on January 18, 2001 and a letter sent by Mark Peavy on January 16, 2001 which describes a plan where the excess death benefit occurs for the first few years only, then the account value is restored after that.

Several minor clarification changes were made. An additional item was added to the projection assumptions to address a plan where the projected policy values may go negative, then become positive again, all during the guarantee period. The addition to the draft Guideline makes it clear that the projection of policy values is made for the entire guarantee period, regardless of whether projected policy values are positive or negative during the projection. Wording was also added in the "Effective Date" section to clarify what the residue should be when the draft Guideline is applied for the first time.

Recently, Guaranteed Minimum Death Benefits (GMDB) reserve examples have been brought to the attention of the Work Group. These examples demonstrate an inconsistency in the Attained Age Level Reserve (AALR) methodology when reserving for similar risks within a Variable Universal Life (VUL) product design. While the Work Group does not believe that this has a major impact on the AALR level for many common VUL product designs, there are some product designs which can build up very high AALR levels relative to the risk (i.e., shadow account design). This situation indicates the need for further work in developing appropriate VL reserve methodology once the draft Guideline is adopted. The Work Group believes that the wording in the draft Guideline that provides for the appointed actuary to show documentation (stating that particular reserves may be redundant) should be retained because of the above examples.

Section I. Answers to NAIC Questions

Question 1

The draft Guideline mentions the 1983 and 1989 versions of the Variable Life Insurance Model Regulation. Given that the 1983 version may not be readily available to everyone, would it be appropriate for the draft Guideline to describe these two versions in more detail and outline the applicability and differences between them?

Answer: Yes. See Attachment 1 for more detail.

Question 2

The following set of questions refers to the “Definitions” section of the draft Guideline that describes the projection assumptions of policy value.

Should we assume renewal premiums be paid in subsequent periods?
If yes, what are the assumed renewal premiums? If no, is it reasonable to assume the contingent premiums be paid even if we do not assume any renewal premiums?

Answer: Reference #2 under “Projection Assumptions” (revised) in the draft Guideline, shows it should be clear that, if the continuation of the secondary guarantee is contingent on the receipt of premiums, then the exact amount of premium needed to continue the GMDB (paid at the point in time necessary to prevent termination of the GMDB) is required to be assumed. No additional premiums are to be assumed beyond the amount necessary to continue the GMDB.

(b) Should we use the valuation interest rate to calculate the One-Year Term(OYT) reserve if the variable life contract does not specify the assumed interest rate?

Answer: Reference #3 under “Projection Assumptions” (revised) in the draft Guideline, clearly states that both the general and separate account portions are projected at the valuation interest rate. The OYT reserve calculation must use the assumed investment rate if it exists and is different than the valuation rate, otherwise, the valuation rate is used.

(c) Should the policy value be projected at an interest rate equal to the valuation interest rate or valuation interest rate less M&E charges?

Answer: Reference #1 and #3 under “Projection Assumptions” (revised) in the draft Guideline, shows the projection is done at valuation interest rates with no M&E charges deducted. Note, that in the revised version, no policy charges (asset based or explicit) are deducted.

(d) If a policyholder purchased the waiver of cost-of-insurance (COI) rider and is disabled as of the valuation date, should we continue to use the guaranteed COI to calculate GMDB reserve?

Answer: The Work Group suggests that one should assume that the policyholder recovers from waiver status and calculates the reserve as if it were for an active policy. Reference #1 and #2 under “Projection Assumptions” (revised) in the draft Guideline, shows the waiver benefit presumably has a separate reserve established to pay future waived COI’s. Projections should be made using COI’s based on minimum valuation mortality, not policy COI’s, either guaranteed or current. Under #2 the projection is to be made assuming all contingencies required to maintain the GMDB in effect occur. In the instance of a waiver benefit, the contingency, which needs to occur, is that the insured recovers from waiver status. Thus, the GMDB reserves calculation would be the same for a policy under waiver as for a policy without waiver. The Disabled Life Disability Reserve could be used as an offset to the AALR up to the amount of the AALR.

(e) As the 1/3 drop is not applicable to the fixed account values, should the projection assumptions only be applicable to the separate account policy value? If yes, what should be the assumed interest rate for the fixed account values? If no, would the draft Guideline allow companies to use the contractual guaranteed rate for the fixed account if it is greater than valuation interest rate?

Answer: No, the draft Guideline projection assumptions require both the general account and the separate account to be projected. Reference #4 under Projection Assumptions (revised) in the draft Guideline, states that the assumed interest rate (AIR) must be used if it exists and differs from the valuation rate. For a VUL that typically does not contain an AIR the draft Guideline calls for both the separate and general account to be projected at the valuation rate.

Question 3

The following questions refer to page six of the draft Guideline, section two "Guaranteed Minimum Death Benefit Reserves." Paragraphs three and four define GMDB reserves for (a) "a policy under the 1989 revision or flexible premium policy with contingent GMDB similar to Specified premium contract under the 1983 revision" and (b) "a flexible premium policy under the 1983 revisions not covered above."

(a) Does the word "revisions" used in these two paragraphs actually refer to the 1983 and 1989 versions of the Variable Life Insurance Model Regulation?

Answer: Yes.

(b) The reserve methodologies mentioned in these two paragraphs are identical. Are there any reasons why the methodologies are discussed in two separate paragraphs?

Answer: This question does address a key issue regarding our interpretation of the 1983 and 1989 revisions, and the wording within that section of the draft Guideline has been revised. In order to provide a uniform interpretation and reserve calculation for GMDBs, much of the draft Guideline is based on the following key assumptions:

A flexible premium contract which requires a contingent premium in order to maintain the GMDB, in essence is a scheduled premium contract for the purposes of valuing this benefit, and, as such, the reserve requirements for a scheduled premium contract would apply. It is the Work Group's belief that it was never the intent of the 1983 revision that "the aggregate total of term costs" after a 1/3 drop should apply beyond one year.

These assumptions are discussed to some extent within the background section of the draft Guideline, but there is no clear statement of these assumptions. The Work Group believes that these underlying assumptions need to be clearly stated within the draft Guideline and there needs to be agreement among the regulators that these assumptions are appropriate. Otherwise, the Work Group believes that the states will vary in their recognition and adoption of the draft Guideline.

This question addresses a fundamental interpretation issue regarding the application of the 1983 and 1989 revisions of the VL Model Regulation. The Work Group has interpreted that a contingent premium requirement creates a scheduled premium contract, and, as such, the flexible premium wording of the 1983 revision does not apply to most VL contracts available today. This subject is addressed several places within the background section of the draft Guideline as follows:

Page two, paragraph two: "The 1983 version of the regulation did not anticipate the types of GMDBs available today which require contingent conditions to be met to maintain a death benefit guarantee, for instance specified premiums must be paid."

Page two, paragraph three: "This guideline focuses on the methodology of the 1989 revisions to interpret SVL, as we believe the 1989 revision more appropriately considers the types of products and GMDBs available today."

Page three, paragraph five: “This guideline is based on the belief that the 1983 revisions did not anticipate these types of GMDB benefits on flexible premium contracts. Thus, it makes sense to interpret the 1983 revisions for these types of GMDB benefits by applying the AALR methodology when there is a contingent GMDB structure. For flexible premium plans with other types of GMDBs, the flexible premium language of the 1983 revision is used where applicable. Reflecting a 1/3 drop in asset values is used only to develop a one-year term reserve.”

Question 4

On page eight of the draft Guideline, there is a subsection with the title "c) Other Flexible Premium Policies under the 1983 revisions not included above". Is it true that these policies are already covered on page six ? Please clarify.

Answer: The subsection titled "c) other Flexible Premium Policies under the 1983 revisions not included above" addresses assumptions to be used to determine the present value of potential guaranteed minimum death benefits in the absence of a GMDB guarantee in the AALR calculation.

The wording on page six, refers to the same policies as the previously mentioned subsection. However, it does address the methodology.

Question 5

Assuming that we have a variable life policy which provides death benefits under Option A, the death benefit will remain level unless the account value triggers the DEFRA death benefit corridor. Investment results are reflected in the account value and may affect the amount or duration of the death benefit. However, the amount and duration of death benefit may not be varying directly with the investment results until the account value trigger the DEFRA corridor. Should such a contract be covered under the draft Guideline or Model Regulation XXX?

Answer: If it is a variable life contract, then the draft Guideline applies.

Question 6

Actuarial Guideline 34 covers the GMDB for variable annuities and incorporates reinsurance premiums in the calculation of GMDB reserve. The draft Guideline, however, is silent in the reinsurance premium issue. Has this issue been discussed and ruled out? Please clarify.

Answer: The Work Group found no special reinsurance considerations are involved with the draft Guideline.

Section II. Attachment 1

The attachment refers to reserving changes from the 1983 VL Model to the 1989 VL Model.

The following two sections show the two versions of the reserving section of the Variable Life Model Regulations from 1983 and 1989. (Minnesota's law is used here since the 1983 model itself was not available electronically). At the conclusion of each paragraph of the newer version of the reserve section of the model, it is indicated what is different from the earlier version.

I. 1983 Version of the Variable Life Insurance Model – Minnesota Version Shown (complete statutes available at <http://www.revisor.leg.state.mn.us/arule/2750/>).

2750.2100 Standard Valuation Law

Reserve liabilities for variable life insurance policies shall be established under the Standard Valuation Law, Minnesota Statutes, section 61A.25, in accordance with actuarial procedures that recognize the variable nature of the benefits provided and any mortality guarantees.

2750.2200 Scheduled Premium Policies

For scheduled premium policies, reserve liabilities for the guaranteed minimum death benefit shall be the reserve needed to provide for the contingency of death occurring when the guaranteed minimum death benefit exceeds the death benefit that would be paid in the absence of the guarantee, and shall be maintained in the general account of the insurer and shall be not less than the greater of the following minimum reserves:

- A. The aggregate total of the term costs, if any, covering a period of one full year from the valuation date, of the guarantee on each variable life insurance contract, assuming an immediate one-third depreciation in the current value of the assets of the separate account followed by a net investment return equal to the assumed investment rate; or
- B. The aggregate total of the "attained age level" reserves on each variable life insurance contract. The "attained age level" reserve on each variable life insurance contract shall not be less than zero and shall equal the "residue," as described in sub-item (1), of the prior year's "attained age level" reserve on the contract, with any such "residue," increased or decreased by a payment computed on an attained age basis as described in sub-item (2).
 1. The "residue" of the prior year's "attained age level" reserve on each variable life insurance contract shall not be less than zero and shall be determined by

adding interest at the valuation interest rate to such prior year's reserve, deducting the tabular claims based on the "excess," if any, of the guaranteed minimum death benefit over the death benefit that would be payable in the absence of such guarantee, and dividing the net result by the tabular probability of survival. The "excess" referred to in the preceding sentence shall be based on the actual level of death benefits that would have been in effect during the preceding year in the absence of the guarantee, taking appropriate account of the reserve assumptions regarding the distribution of death claim payments over the year.

2. The payment referred to in part 2750.2200, item B shall be computed so that the present value of a level payment of that amount each year over the future premium paying period of the contract is equal to (A) minus (B) minus (C), where (A) is the present value of the future guaranteed minimum death benefits, (B) is the present value of the future death benefits that would be payable in the absence of such guarantee, and (C) is any "residue," as described in sub-item (1) of the prior year's "attained age level" reserve on such variable life insurance contract. If the contract is paid-up, the payment shall equal (A) minus (B) minus (C). The amounts of future death benefits referred to in (B) shall be computed assuming a net investment return of the separate account which may differ from the assumed investment rate and/or the valuation interest rate but in no event may exceed the maximum interest rate permitted for the valuation of life contracts.

- C. The valuation interest rate and mortality table used in computing the two minimum reserves described in item B, sub-items (1) and (2) shall conform to permissible standards for the valuation of life insurance contracts. In determining such minimum reserve, the company may employ suitable approximations and estimates, including but not limited to groupings and averages.

2750.2201 Flexible Premium Policies

For flexible premium policies, reserve liabilities for any guaranteed minimum death benefit shall be maintained in the general account of the insurer and shall be not less than the aggregate total of the term costs, if any, covering the period provided for in the guarantee not otherwise provided for by the reserves held in the separate account assuming an immediate one-third depreciation in the current value of the assets of the separate account followed by a net investment return equal to the valuation interest rate.

The valuation interest rate and mortality table used in computing this additional reserve, if any, shall conform to permissible standards for the valuation of life insurance contracts. In determining the minimum reserve, the company may employ suitable approximations and estimates, including but not limited to groupings and averages.

2750.2300 Fixed Incidental Insurance Benefits

Reserve liabilities for all fixed incidental insurance benefits and any guarantees associated with variable incidental insurance benefits shall be maintained in the general account and reserve liabilities for all variable aspects of the variable incidental insurance benefits must be maintained in a separate account in amounts determined in accordance with the actuarial procedures appropriate to such benefit.

II. 1989 Version of Model Law – Text is from Actual Model Law

Section 5: Reserve Liabilities For Variable Life Insurance

A. Reserve Liabilities Under Standard Valuation Law

Reserve liabilities for variable life insurance policies shall be established under [insert citation to the standard valuation law] in accordance with actuarial procedures that recognize the variable nature of the benefits provided and any mortality guarantees.

Note: Same as above.

B. Reserve Liabilities for the Guaranteed Minimum Death Benefit

Reserve liabilities for the guaranteed minimum death benefit shall be the reserve needed to provide for the contingency of death occurring when the guaranteed minimum death benefit exceeds the death benefit that would be paid in the absence of the guarantee, and shall be maintained in the general account of the insurer and shall not be less than the greater of the following minimum reserves:

Note: Same as above but, “For scheduled premiums contracts” was omitted.

1. The aggregate total of the term costs, if any, covering a period of one full year from the valuation date or, if less, covering the period provided for in the guarantee not otherwise provided for by the reserves held in the separate account, on each variable life insurance contract, assuming an immediate one-third depreciation in the current value of the assets in the separate account followed by a net investment return equal to the assumed investment rate; or

Note: Same as above but, “of the guarantee on each variable life insurance contract” was replaced with “or, if less, covering the period provided for in the guarantee not otherwise provided for by the reserves held in the separate account, on each variable life insurance contract.”

2. The aggregate total of the “attained age level” reserves on each variable life insurance contract. The “attained age level” reserve on each variable life insurance contract shall not be less than zero and shall equal the “residue,” as described in sub-paragraph (i) below, of the prior year’s “attained age level” reserve on the contract, with any such “residue,” increased or decreased by a payment computed on an attained age basis as described in sub-paragraph (ii) below.

Note: Same as above.

- i. The “residue” of the prior year’s “attained age level” reserve on each variable life insurance contract shall not be less than zero and shall be determined by adding interest at the valuation interest rate to the prior year’s reserve, deducting the tabular claims based on the “excess,” if any, of the guaranteed minimum death benefit over the death benefit that would be payable in the absence of a guarantee, and dividing the net result by the tabular probability of survival. The “excess” referred to in the preceding sentence shall be based on the actual level of death benefits that would have been in effect during the preceding year in the absence of the guarantee, taking appropriate account of the reserve assumptions regarding the distribution of death claim payments over the year.

Note: Same as above.

- ii. The payment referred to in this paragraph shall be computed so that the present value of a level payment of that amount each year over the future period for which charges for this risk will be collected under the contract, is equal to (A) minus (B) minus (C), where (A) is the present value of the future guaranteed minimum death benefits, (B) is the present value of the future death benefits that would be payable in the absence of such guarantee, and (C) is any “residue,” as described in sub-paragraph (a), of the prior year’s “attained age level” reserve on such variable life insurance contract. If no future charges for this risk will be collected under the contract, the payment shall equal (A) minus (B) minus (C). The amounts of the future death benefits referred to in (B) shall be computed assuming a net investment return of the separate account which may differ from the assumed investment rate or the valuation interest but in no event may exceed the maximum interest rate permitted for the valuation of life contracts.

Note: Same as above but, “future premium paying period of the contract” in the second line was replaced with “over the future period for which charges for this risk will be collected under the contract.” In addition, “if the contract

is paid-up,” in the middle of the paragraph was replaced with “if no future charges for this risk will be collected under the contract.”

3. The valuation interest rate and mortality table used in computing the two minimum reserves described in Paragraph (1) and (2) of this subsection shall conform to permissible standards for the valuation of life insurance contracts. In determining the minimum reserves, the company may employ suitable approximations and estimates, including but not limited to groupings and averages.

Note: Same as above. Also, notice that the next two paragraphs specifically referring to flexible premium products were deleted.

C. Incidental Insurance Benefit

Reserve liabilities for all fixed incidental insurance benefits and any guarantees associated with variable accidental insurance benefits shall be maintained in the general account and reserve liabilities for all variable aspects of the variable incidental insurance benefits shall be maintained in a separate account, in amounts determined in accordance with the actuarial procedures appropriate to the benefit.

Note: Same as above.

Section III. AG VL-GMDB

Note: The changes recommended by the Academy's VLRG Work Group are underlined and deleted material is shown by a strike-through.

Draft: ~~12/1/00~~02/22/01

The NAIC solicits comments on this draft. Comments should be addressed to Mark Peavy, NAIC, 2301 McGee, Suite 800, Kansas City, Missouri, 64108. E-mail submissions to mpeavy@naic.org are preferred.

ACTUARIAL GUIDELINE VL-GMDB

VARIABLE LIFE INSURANCE RESERVES FOR GUARANTEED MINIMUM DEATH BENEFITS

Background

This guideline's primary focus is to clarify the appropriate projection assumptions and methodologies used to determine statutory reserve liabilities for Guaranteed Minimum Death Benefits (GMDBs) offered with variable life insurance products.

For many years, insurance companies have not applied uniform reserve standards to variable life insurance policies in general, and to GMDBs in particular. Four regulatory sources are often looked to for guidance. First, the Standard Valuation Law (SVL) requires that CRVM be based on the present value of future guaranteed benefits. Second, the Variable Life Insurance Model Regulation as revised in 1983 and again in 1989 states "Reserve liabilities for variable life insurance policies shall be established under [SVL] in accordance with actuarial procedures that recognize the variable nature of the benefits provided and any mortality guarantees." Third is the Universal Life Insurance Model Regulation and most recently the Valuation of Life Insurance Policies Model Regulation.

GMDBs are common features of variable life products. Recently, reserve methods for universal life secondary guarantees have been clarified in the Valuation of Life Insurance Policies Model Regulation. These secondary guarantees are similar to GMDBs offered with variable life policies. A Guaranteed Minimum Death Benefit is any guarantee which provides death benefit protection which would not otherwise be provided in the absence of such a guaranteed benefit or provision. An example of a GMDB is a policy in which death benefits continue in-force even if the policy value is zero. This benefit may be contingent on additional qualifications being met, such as cumulative premiums meeting some limit.

Additional examples of GMDBs are provided below. This list is not intended to include all types of GMDBs.

- A Minimum Death Benefit Provision or No Lapse provision where death benefits are guaranteed to remain in-force for a period of time even if the policy value is not greater

than zero subject only to certain conditions being met such as cumulative premiums meeting a minimum amount, or if a theoretical ~~account value~~policy value is sufficient to meet a minimum amount.

- Death Benefits that are guaranteed to be at least as large as the original face amount, regardless of investment performance which might generate negative Paid Up Additions on a traditional fixed premium variable life insurance policy.

The Variable Life Insurance Model Regulation defines the reserve methodology for variable life policies. However, currently two versions of the model regulation exist and this results in inconsistent treatment by state. These two versions include the 1983 revisions and the 1989 revisions to the model regulation. Many states have not passed either revision and therefore require direct interpretation of SVL. In practice, companies have interpreted these regulations inconsistently with regard to assumptions and/or application to current products available today. The 1983 version of the regulation treats flexible premium policies differently than scheduled premium policies. The 1983 version of the regulation did not anticipate the types of GMDBs available today which require contingent conditions to be met to maintain a death benefit guarantee, for instance specified premiums must be paid. Thus, confusion exists with regard to which valuation method is appropriate. The 1989 version makes no distinction between the scheduled premium and flexible premium policies.

This Guideline codifies the basic interpretation of reserve liabilities for variable life GMDBs by clarifying the projection assumptions and methodologies that comply with the SVL. Minimum valuation standards that may be used to determine this reserve and are not specifically addressed in this guideline are defined by SVL and other applicable state regulations. This guideline focuses on the methodology of the 1989 revisions to interpret SVL, as we believe the 1989 revision more appropriately considers the types of products and GMDBs available today.

Interpretations of both the 1983 and 1989 versions reflect the comments made in the December 1972 report which concluded that an acceptable GMDB reserve system should have the following characteristics:

1. The GMDB reserve should be held in the general account of the company so that it will be backed by the general assets of the company, most of which are debt obligations valued at amortized cost and, therefore, are of a fixed dollar nature. It would not be proper to hold the GMDB reserve in the separate account, assuming the reserve is not supported by fixed dollar assets but by assets that are moving in the opposite direction from the risk, i.e. value moving downward while the risk increases and vice versa.
2. The GMDB reserve should be adequate to cover the GMDB death claims for the next year in all but the most extreme circumstances so that the regulatory authorities can be assured the company will not run into financial trouble from this source before the next annual statement is filed.
3. The GMDB reserve should react slowly but steadily through an extended period of poor investment experience of the separate account.

4. The GMDB reserve should not cause unnecessary fluctuations in surplus by increasing too rapidly in a sharp market downswing. Also, the reserve should not decrease too rapidly in a sharp market upswing after a period of poor market performance.

This guideline maintains the four principles above in interpreting the Standard Valuation Law as it relates to variable life business and the methods defined in both the 1983 and 1989 versions of the Variable Life Insurance Model Regulation.

Reserve methodologies which recognize the variable nature of GMDB are defined in the Variable Life Insurance Model Regulation and include a One-Year Term reserve recognizing a 1/3 drop in ~~account value~~ separate account assets, the Attained Age Level Reserve (AALR) methodology and in the 1983 version, a methodology for flexible premium policies. Reserves for GMDBs are held in the general account.

This guideline recognizes the following principles when determining appropriate reserves for GMDB.

- Determine the guaranteed death benefits which are not valued in the basic policy reserves.
- Establish a reserve for these benefits over the period of time in which revenue is collected to pay for such benefits; however, no greater than the period of time these guaranteed benefits are provided.
- Collected revenue should not be de-minimus in order to reduce the reserve.
- The reserve established is in addition to basic reserves.

This guideline interprets the standards for applying these methodologies. This guideline also interprets the projection assumptions to be applied to determine excess guaranteed death benefits. The guideline clarifies the use of the AALR methodology for flexible premium variable life policies with contingent GMDB benefit structures similar to specified premium contracts. This guideline is based on the belief that the 1983 revisions did not anticipate these types of GMDB benefits on flexible premium contracts. Thus, it makes sense to interpret the 1983 revisions for these types of GMDB benefits by applying the AALR methodology when there is a contingent GMDB structure. For flexible premium plans with other types of GMDBs, the flexible premium language of the 1983 revision is used where applicable.

The AALR methodology, along with the one-year term reserve is generally consistent with the principles above in that additional reserves are established in recognition of all death benefit guarantees not reflected in basic reserves. If multiple guarantees exist all guarantees must be valued and the greatest additional reserve is held. Consecutive GMDBs are treated as a single guarantee. These reserves are funded over the period of time GMDB Revenue will be collected through either policy charges or premiums, however, not to exceed the GMDB benefit period.

The AALR methodology funds any GMDB Revenue deficiency over the period of time the Revenue is collected, however, no longer than the end of the guarantee period.

GMDB reserves are held in addition to basic reserves unless the appointed actuary provides satisfactory documentation to the state of domicile insurance department stating why such reserves are redundant. For example, for traditional variable life product designs where reserves are generally determined on a tabular basis and use an assumed interest rate (AIR), if basic reserves are determined based on at least the guaranteed face amount, (i.e. ignoring any negative additions) then the guaranteed death benefit is fully reflected in the basic reserves; therefore, an additional GMDB reserve is redundant. Neither this guideline nor the 1989 amendments specifically address traditional variable life product designs, nor does this guideline specifically exclude these designs from its scope.

An additional purpose of this guideline is to emphasize the impact of Sections 3A(3) and 3A(4) in the Valuation of Life Insurance Policies Model Regulation (“XXX”) relative to reserving for variable life and variable universal life products.

Scope

The guideline applies to all variable life insurance contracts to which the Standard Valuation Law applies and which provide Guaranteed Minimum Death Benefits (GMDBs) either explicitly or implicitly.

Definitions

Attained age level reserve (AALR): The AALR is a methodology described in the 1983 and 1989 revisions to the Variable Life Insurance Model Regulation.

Catch-up provision: A Catch-up provision is a provision in the policy that gives the policyholder the right to catch up on any contingent requirements in order to maintain the GMDB.

Guaranteed Period: The guaranteed period is the period of time over which a GMDB is guaranteed regardless of the basic guarantees in the policy. A policy may have multiple guaranteed periods and GMDBs.

Guaranteed Minimum Death Benefit (GMDB): A Guaranteed Minimum Death Benefit (GMDB) is any guarantee which provides continued death benefit protection which would not otherwise be provided in the absence of such a guaranteed benefit or provision. A policy may have multiple GMDBs.

One-Year Term (OYT) reserve: The OYT reserve covers a period of no more than one year following a $\frac{1}{3}$ ~~asset drop~~ ~~in the account value~~. This reserve is fully described in the 1989 revision to the Variable Life Insurance Model Regulation. This guideline clarifies the methodology and the assumptions used to determine OYT reserves.

Projection Assumptions: The Projection Assumptions are used to determine guaranteed death benefits. This projection of policy values uses the following assumptions:

1. Cost of insurance rates are equal to the minimum valuation mortality.
2. The GMDB is assumed to be in effect for the maximum period of the GMDB. All minimum requirements necessary to maintain the GMDB in force subsequent to the valuation date are assumed to be met at the latest point in time sufficient to maintain the GMDB through its maximum period. Contingent requirements, if any, required to reinstate or catch-up as of the valuation date are assumed to occur on the valuation date. If the GMDB would continue in effect subsequent to the valuation date with no additional actions required, contingent requirements are assumed not to resume until the latest point in time which would prevent the termination of the GMDB.
3. The general account policy values and separate account policy values are projected at the valuation interest rate. The assumed interest investment rate, if any, is used when determining the OYT reserve.
4. The guaranteed period covered is determined assuming all contingent requirements are met.
5. ~~5.~~ Policy options and benefits are assumed to continue unchanged as of the valuation date. Examples include fixed and variable account allocation and the death benefit option.
6. The projection of policy values is made for the entire guarantee period, regardless of whether projected policy values are positive or negative at any point in the projection. Any negative policy value would be set to zero.

GMDB Revenue: GMDB Revenue is policy charges or premium, either implicit or explicit. These charges or premiums may or may not be explicitly stated to cover GMDB benefits. An example of an implicit premium is a positive premium necessary to maintain a target account value policy value in order to maintain benefits.

~~*Separate Account Death Benefit (SADB):* The SADB is the death benefit that would be payable in absence of the GMDB.~~

Term cost: Term costs are based on the guaranteed minimum death benefits in excess of the death benefits that would be provided in absence of such guarantee based on a projection of policy values using the Projection Assumptions defined above. These costs are then discounted to the valuation date. The term costs are based on minimum valuation mortality standards and a discount rate not to exceed the maximum valuation interest rate.

1/3-Asset Drop: A 1/3 reduction in separate account value assets that is used in the calculation of the one-year term reserve. This 1/3 drop is not applied to fixed account value assets.

Text

1. Basic Reserves:

Basic Reserves include the reserve held for death benefits provided in the absence of a GMDB. Reserve liabilities for variable life insurance policies shall be established consistent with the methodologies described in the Standard Valuation Law and in accordance with actuarial procedures that recognize the variable nature of the benefits provided and any mortality guarantees. Reserve methods described in the Variable Life Insurance Model Regulation and the Universal Life Insurance Model Regulation may be appropriately utilized to determine reserve liabilities such that application of these methods is consistent with the principles of the Standard Valuation Law.

2. Guaranteed Minimum Death Benefit Reserves:

Additional reserves are required to provide for liabilities of GMDB provisions which provide benefits that would not be provided in the absence of the guarantee. In measuring these liabilities, the basic reserve provides for death benefits which occur in the absence of the guarantee. GMDB reserves provide for the contingency of death occurring when the guaranteed minimum death benefit exceeds the death benefit that would be paid in absence of the guarantee. A consistent reserve methodology should be used regardless of whether a contract has scheduled premiums or flexible premiums.

When a contract provides multiple GMDBs and/or multiple guarantee periods, a reserve is established based on the guaranteed period which produces the greatest reserve as of the valuation date. Consecutive GMDBs are treated as a single guarantee period. The reserve methodology reflects all potential guarantee periods assuming that contingent requirements are met such as: contingent premiums paid, Catch-up Provisions or any pre-funding of contingent requirements.

For a policy under the 1989 revisions or a flexible premium policy with contingent GMDBs similar to a specified premium contract under the 1983 revision, the GMDB reserve equals the greater of (1) and (2) where (1) equals “the aggregate total of term costs” (OYT) which covers a period of no more than one year following a 1/3-Asset Drop, ~~in the separate account value,~~ and (2) equals the AALR as described below.

For a flexible premium policy under the 1983 revisions not covered above, (where the GMDB guarantee is not contingent on any policyholder requirement), ~~reserve liabilities for any guaranteed minimum death benefit shall be maintained in the general account of the insurer and shall be not less than the aggregate total of the term costs, if any, covering the period provided for in the guarantee not otherwise provided for by the reserves held in the separate account assuming an immediate one third depreciation in the current value of the assets of the separate account followed by a net investment return equal to the valuation interest rate. assuming a 1/3-asset drop, projected at the valuation interest rate.~~

a) One Year Term Reserves (OYT):

This reserve component equals the “aggregate total of term costs”, if any, covering a period of one full year from the valuation date, or, if less, covering the period of time death benefits are provided which are not otherwise provided for by the basic reserves. This reserve assumes any

contingent requirements to maintain the GMDB are met by reflecting any Catch-up Provisions or any pre-funding of contingent requirements.

“Aggregate total term costs” equals the present value of guaranteed minimum death benefits in excess of death benefits that would be provided in absence of such guarantee, if any, prior to the end of one full year or the end of the guaranteed period if sooner. A death benefit in the absence of the guarantee is assumed to be provided as long as the projected policy value is greater than zero. Death benefits are determined by projecting the policy value following a 1/3 -Asset Drop and using the Projection Assumptions defined above. Present values are determined using valuation mortality rates and the maximum valuation interest rate.

b) Attained Age Level Reserves (AALR):

This reserve component allows for funding GMDBs over no longer than the guaranteed period. This reserve assumes contingent requirements are met to maintain the GMDB and reflect any prepaid contingent requirements or Catch-up provisions. A death benefit in the absence of the guarantee is assumed to be provided as long as the projected policy value is greater than zero. This reserve component exists until no later than the end of the guarantee period if, on any prior valuation date, projected policy values resulted in guaranteed minimum death benefits in excess of death benefits that would be provided in absence of such guarantee. To the extent long term favorable investment performance results in redundant reserves, the valuation actuary may request permission from the state of domicile insurance department to release all or a portion of the redundant GMDB reserves. This projection of ~~account~~ policy value is based on the Projection Assumptions defined above and does not incorporate a ~~no~~ 1/3-Asset Drop ~~and the Projection Assumptions defined above.~~

The AALR reserve component shall not be less than zero and shall equal the “residue,” as described in paragraph (1) below, of the prior year’s AALR on the contract, with any such “residue,” increased or decreased by a “payment” computed on an attained age basis as described in paragraph (2) below.

- (1) The “residue” of the prior year’s AALR on each variable life insurance contract shall not be less than zero and shall be determined by adding interest at the maximum valuation interest rate to such prior year’s reserve, deducting the tabular claims based on the “excess”, if any, of the guaranteed minimum death benefit over the death benefit that would be payable in absence of such guarantee, and dividing the result by the tabular probability of survival. Hence, tabular costs are only deducted for years where, in the absence of the guarantee, coverage would be less than the guaranteed coverage.
- (2) The “payment” used to increase or decrease the “residue” above shall be computed so that the present value of a level payment of that amount each year over the future period for which GMDB Revenue will be collected under the contract is equal to (A) minus (B) minus (C), where, (A) is the present value of future guaranteed minimum death benefits. The future guaranteed minimum death benefits are the projected future death benefits including the GMDB. (B) is the present value of the projected future death benefits that would be payable in the absence of the GMDB. The guaranteed benefit for (A) and (B)

should be calculated for the life of the policy. Both (A) and (B) are calculated based on the Projection Assumptions. (C) is any "residue," as described in paragraph (1) above, of the prior year's AALR on such variable contract. Minimum standards of valuation mortality assumptions and maximum valuation interest rates are used to determine present values and net level payments. The period of time in which GMDB Revenue will be collected is limited to the period of time ~~policy value~~ policy values are sufficient to collect policy charges or the period of time contingent requirements will be paid to maintain the GMDB. In no event will the time period be greater than the time to the end of the guarantee period. It should also be noted that the "payment" may be negative resulting in the reserve running off over the remaining guarantee period.

c) Other Flexible Premium Policies under the 1983 revisions not included above:

The present value of potential guaranteed minimum death benefits in excess of death benefits that would be provided in absence of such guarantee is determined by using minimum standards of valuation mortality assumptions and maximum valuation interest rates.

3. Other Issues:

Sections 3A(3) and 3A(4) of "XXX" state the following:

3A(3): This regulation shall not apply to any variable life insurance policy that provides for life insurance, the amount or duration of which varies according to the investment experience of any separate account or accounts.

3A(4): This regulation shall not apply to any variable universal life insurance policy that provides for life insurance, the amount or duration of which varies according to the investment experience of any separate account or accounts.

The language of these sections is clear. The reserving for variable life and variable universal life is in no way affected by the provisions of "XXX." In particular, the 19-year select factors and the "X" factor are not applicable to the calculation of reserves for variable life and variable universal life products.

Effective Date

This guideline affects all variable life insurance contracts issued. Where the application of this Guideline produces higher reserves than the company had otherwise established by their previously used interpretation, such company must comply with this guideline effective December 31, 2001. However, such company may request a grace period, not to exceed three (3) years, from the domiciliary Commissioner upon satisfactory demonstration of the previous interpretation and that such delay of implementation will not cause a hazardous financial condition or potential harm to its policyholders.

~~Application of this guideline to in-force policies~~ Retroactive application of the guideline to in-force policies to develop the current residue portion of the AALR ~~may~~ will generally not be feasible, ~~as such future payments as defined in the AALR methodology will be based on the~~

~~residue, if any, as of 12/31/2000. In such cases, the residue as of 12/31/2000 will be deemed to be '0.'~~ Therefore, the residue as of 12/31/2000 should be set equal to the greater of the amount established by the company under its current method or \$0 if the company did not previously calculate an AALR.

W:dec00\lha\agvlgm5