



AMERICAN ACADEMY *of* ACTUARIES

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## MEMORANDUM

**To:** NAIC Life and Health Actuarial Task Force  
**From:** Academy Annuity Nonforfeiture Implementation Work Group  
**Subject:** Draft Model Regulation  
**Date:** 12/05/03

## ANNUITY NONFORFEITURE MODEL REGULATION

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### Section 1 Authority

This regulation is promulgated by the Commissioner of Insurance pursuant to Sections [insert applicable references to Section 4D of the Standard Nonforfeiture Law for Individual Deferred Annuities] of the [insert jurisdiction] Insurance Laws.

### Section 2 Purpose

The purpose of this regulation is to adopt rules to provide for further adjustments to [insert applicable references to Section 4B of the Standard Nonforfeiture Law for Individual Deferred Annuities] and to implement the provisions of [insert applicable references to Section 4C of the Standard Nonforfeiture Law for Individual Deferred Annuities].

### Section 3 Definitions

- A. “Basis” carries two meanings.
- (1) When used in the context of an initial or redetermination method, “basis” means the date or average over a specified period that is used in referencing the value of the five-year Constant Maturity Treasury Rate.
  - (2) When used in the context of equity indexed benefits, “basis” means the point in time used for establishing the value of the equity indexed options. This refers to the parameters for risk free rate, dividend yield, index volatility, prior index values if the option is path dependent, and any other relevant parameters.
- B. “Date triggered method” means a method for determining the initial rate or redetermination rate that is dependent only upon a date or dates of the index.

- C. “Initial method” means the basis upon which the initial minimum nonforfeiture interest rate is established and the period for which it applies.

[Drafting note: It is acceptable for the period within the initial method to last for the entire length of the contract. This is equivalent to not having any redetermination rates or redetermination periods.]

- D. “Initial rate” means the minimum nonforfeiture interest rate applicable at contract issue.
- E. “Minimum nonforfeiture amount” means the minimum value required under the [insert applicable references to Section 4B of the Standard Nonforfeiture Law for Individual Deferred Annuities] of the [insert jurisdiction] Insurance Laws. It reflects net considerations, the nonforfeiture rate, and other items as specified in [insert applicable references to Section 4A of the Standard Nonforfeiture Law for Individual Deferred Annuities] of the [insert jurisdiction] Insurance Laws.
- F. “Nonforfeiture rate” means the interest rate used in determining the minimum nonforfeiture amount. This will be determined at issue (initial rate) and, if applicable, each subsequent redetermination period (redetermination rate).
- G. “Redetermination method” means the redetermination date, basis, and period for all future redetermination rates.
- H. “Redetermination rate” means the nonforfeiture rate applicable at redetermination.
- I. “Substantive participation in an equity indexed benefit” means an annual cost of 25 basis points or more attributable to the equity indexed benefit.

#### Section 4 Initial Method

- A. The initial method shall be filed with the Commissioner in accordance with jurisdictional filing and approval requirements.
- B. Changes to the initial method are allowed once per calendar year. Any changes to the initial method shall be filed with the Commissioner in accordance with jurisdictional filing and approval requirements. A change in initial method would be applicable only to new contracts (or new certificates in the case of a group contract) issued subsequent to the effective date of the change in method.

[Drafting Note: States may consider adopting a deemer provision such that the change in initial method could be deemed approved after an appropriate waiting period, such as 30 or 60 days.]

- C. The initial method is not required to be disclosed in the contract form.

D. The initial rate is not required to be disclosed in the contract form.

[Drafting note: The contractually guaranteed interest rate is required to be disclosed, but the nonforfeiture rate is not required to be disclosed.]

Section 5 Redetermination Method

- A. If redetermination is used, the method shall be disclosed in the contract form.
- B. A company that chooses to change the redetermination method for a previously issued contract can only do so if it is in the favor of the contract owner in all possible scenarios. This change must be filed with the Commissioner in accordance with jurisdictional filing and approval requirements.
- C. Changes in the redetermination method for future issues (or certificate in the case of a group contract) are allowed at any time subject to jurisdictional filing and approval requirements.

Section 6 Nonforfeiture rate for periodic premiums

- A. For annuities that are not equity indexed: At any point in time, each contract (or certificate in the case of a group contract) will have one nonforfeiture rate that is applicable to the entire contract (or certificate in the case of a group contract).
- B. For annuities that are equity indexed: At any point in time, each contract (or certificate in the case of a group contract) will have one nonforfeiture rate that applies to benefits that are not equity indexed. If an additional offset is elected for equity indexed benefits, the contract (or certificate in the case of a group contract) may have an additional lower nonforfeiture rate that applies to such equity indexed benefits.

Section 7 Equity Indexed Benefits

- A. If a company chooses to take the additional offset provided under [insert applicable references to Section 4C of the Standard Nonforfeiture Law for Individual Deferred Annuities], the company must choose either the cost basis approach or the market value approach for demonstrating compliance with the requirements in [insert applicable references to Section 4C of the Standard Nonforfeiture Law for Individual Deferred Annuities].
- B. If a company chooses to change the approach, the company shall file the change with the Commissioner subject to the same certification and compliance demonstration requirements as section 6A.

- C. The cost basis approach utilizes the following steps:
- (1) Take the contract's guaranteed product features, such as the guaranteed participation rate, guaranteed caps, etc.
  - (2) For the option cost, use a basis representative of the point in time at the beginning of the current index term. The company can not change this basis in the middle of the index term.
  - (3) Make no adjustments for persistency, death, utilization, etc.
  - (4) Calculate the total cost of the liability reflecting the capital market option cost with adjustments due to the actuarial assumptions.
  - (5) Calculate an annuity immediate certain for the length of the index term. For the interest rate assumption in the annuity immediate certain, use the same basis for the five-year Constant Maturity Treasury rate as is used underlying the rate calculated in [insert applicable references to Section 4B of the Standard Nonforfeiture Law for Individual Deferred Annuities].
  - (6) Divide the option cost of the liability from step 4 by the annuity immediate certain from step 5. This is the annual cost basis value.
  - (7) If the annual cost basis value meets the criteria for substantive equity indexed participation, then an offset is available equal to the lesser of 100 basis points and the annual cost basis value.
  - (8) With approval from the Commissioner at the time that the approach is filed, the company may also make an irrevocable election to apply this offset for the life of the contract, subject to a commitment to set the contract's product features, such as the participation rates, caps, etc. during such time to support such offset. The offset will then apply for the life of the contract, regardless of the changes in option costs or interest rates.
  - (9) If the company does not make this irrevocable election, then the offset shall be recalculated for each index term.
  - (10) The company shall prepare certification [insert reference] at the time that the contract form is filed and submit it according to the requirements of the jurisdiction.
  - (11) The company shall also annually prepare certification [insert reference] with regard to ongoing compliance and submit it according to the requirements of the jurisdiction.

[Drafting note: The certifications in (10) and (11) are to be prepared by each company as stated. They are to be filed with the state only if the state requires filing of policy forms.]

D. The market value approach utilizes the following steps:

- (1) Take the contract's non-guaranteed product features, such as the current participation rate, current caps, etc.
- (2) For the option cost, use a basis representative of the point in time at the beginning of the current index term. The company can not change this basis in the middle of the index term.
- (3) Reflect best estimate assumptions for the likelihood of payoff of the equity-indexed components.

[Drafting note: For example, the best estimate assumption for persistency would reflect voluntary lapsation and deaths. Also, if the product is structured so that equity indexed benefits are only applied on annuitization, then the likelihood of payoff would only reflect the extent to which the company anticipates providing the contract owner with those equity-indexed benefits. Other factors that influence persistency should also be reflected.]

- (4) Calculate the total cost of the liability reflecting the capital market option cost with adjustments due to the actuarial assumptions.
- (5) Calculate an annuity immediate certain for the length of the index term. For the interest rate assumption in the annuity immediate certain, use the same basis for the five-year Constant Maturity Treasury rate as is used underlying the rate calculated in [insert applicable references to Section 4B of the Standard Nonforfeiture Law for Individual Deferred Annuities].
- (6) Divide the option cost of the liability from step 4 by the annuity immediate certain from step 5. This is the annual market value.
- (7) If the annual market value meets the criteria for substantive equity indexed participation, then an offset is available equal to the lesser of 100 basis points and the annual market value.
- (8) The offset shall be recalculated for each index term.
- (9) The company shall prepare certification [insert reference] at the time that the contract form is filed and submit it according to the requirements of the jurisdiction.
- (10) The company shall also annually prepare certification [insert reference] with regard to ongoing compliance and submit it according to the requirements of the jurisdiction.

[Drafting note: The certifications in (9) and (10) are to be prepared by each company as stated. They are to be filed with the state only if the state requires filing of policy forms.]

Section 8      Effective Date

The effective date of this regulation is [insert date].

## **Value Triggered Method Q&A**

- **What is a value triggered method?**

Under the annuity NF law, an annual reset of the NF rate is clearly allowed. A monthly reset of the NF rate is also clearly allowed. A value triggered method (VTM) tries to compromise between the two of those acceptable endpoints. The NF rate could be reset automatically once each year, then updated throughout the year if rates move more than a certain amount – either up or down. See example 1 below for one specific example.

A VTM is a method whereby the initial NF rate is set through a date triggered method. The NF rate is recalculated consistently according to the date triggered method, however, the NF rate is updated only when the underlying interest rates change by more than a certain amount (“range”). A VTM must reflect changes in the interest rate environment both upwards and downwards. The easiest way to understand how a VTM works is through an example.

Assume the date triggered method (for the initial value) is the average 5 year CMT rate of the preceding month with a one month lag. So for July issues, the rate will be the average rate in May. Assume also that the 5 year CMT average for the initial month is 2.75%, resulting in a NF rate of 1.50%. The range is plus or minus 25 bps. Each month, the new rate is calculated using the date triggered method. As long as the monthly average is within 25 bps of 2.75% (i.e., 2.50% - 3.00%), the NF rate will remain unchanged at 1.50%. In order to comply with the NF law, it is a requirement that in a relatively flat interest rate environment that the NF rate be updated at least frequently enough so that all dates upon which the average is based are within 15 months. Please refer to examples 2 and 3 below for how this might work in a relatively stable interest rate environment.

- **Why is it important?**

The VTM is a balancing act between risk management, regulatory involvement, consumer value, and administrative ease.

From a risk management perspective, the NF rate should be updated as often as possible to reflect the current interest rate environment. From an administrative perspective, the NF rate should be updated as infrequently as possible. From a consumer value perspective, the NF rate should reasonably reflect the current interest rate environment. From a regulatory involvement perspective, the NF rate must comply with the law and be formula driven rather than arbitrary.

A solely date triggered method will update with whatever frequency is declared within the method, such as monthly, quarterly, or annually. This will be done regardless of the interest rate environment at the time. If it is a frequent change, such as monthly, administrative expenses will be higher, which may be passed on to the consumer. Additionally, depending on how long the sales process is, the guaranteed rate that is presented to the consumer has a higher chance of changing between the first meeting and the final sale potentially resulting in consumer confusion and frustration. If it is an infrequent change, such as annually, the NF rate may not reflect the current interest rate environment, resulting in greater risk to the issuing company, which potentially could also get passed on to the consumer.

The VTM balances all these competing interests so that the NF rate is changed only when the interest rate environment changes.

- **Is it permissible under the annuity nonforfeiture law?**

Yes. When appropriately described, the VTM complies with both the letter and the spirit of the law.

The primary difference between this method and a solely date triggered method is that the time period over which any averaging occurs changes. Whereas a date triggered method will always be a constant time lag from the issue date, the value triggered method time lag will vary depending on what has occurred in the interest rate environment.

It is important to note that if interest rates stay fairly constant for at least 15 months, the resulting NF rate from the value triggered method must be updated such that all dates over which any averaging occurs is within 15 months.

- **Should there be restrictions or limitations?**

This is a more subjective question. The goal of the VTM is to accurately reflect the current interest rate environment while reducing the frequency of changes of the nonforfeiture rate. The VTM must reflect interest rate moves consistently both up and down. This means that the allowable range must not be too large. The right answer may be plus or minus 25 bps, 50 bps or even 75 bps. It seems that plus or minus 100 bps is too large.

### Example 1

The NF rate for each calendar year starts with the monthly average for the preceding November. Throughout each calendar year, the NF rate remains constant unless there is a change in the 5 year CMT rate of at least 25 bps either up or down.

Date	5 Year CMT Monthly Average	Potential NF rate	Actual NF Rate	Comments
Nov. 2003	3.0%	N/a	N/a	Monthly rate for next year
Dec. 2003	3.0%	N/a	N/a	
Jan. 2004	3.1%	1.75%	1.75%	January issues have 1.75% NF rate
Feb. 2004	3.2%	1.85%	1.75%	No change since less than 25 bps change in 5 year CMT rate (potential rate is from preceding month for administrative ease)
Mar. 2004	3.3%	1.95%	1.75%	March average is more than 25 bps different from current rate – change NF rate for following month
Apr. 2004	3.3%	2.05%	2.05%	NF rate increases based off of March average rate
May. 2004	3.1%	2.05%	2.05%	
Jun. 2004	3.1%	1.85%	2.05%	
Jul. 2004	2.6%	1.85%	2.05%	5 year CMT dropped this month, so next month potential NF rate will drop. Since more than 25 bps change, actual NF rate changes.
Aug. 2004	2.6%	1.35%	1.35%	
Sep. 2004	2.6%	1.35%	1.35%	
Oct. 2004	2.6%	1.35%	1.35%	
Nov. 2004	2.6%	1.35%	1.35%	Sets rate for 2005 issues
Dec. 2004	2.6%	1.35%	1.35%	
Jan. 2005	2.8%	1.35%	1.35%	
Feb. 2005	2.8%	1.55%	1.35%	Less than 25 bps change
Mar. 2005	2.8%	1.55%	1.35%	
Apr. 2005	2.8%	1.55%	1.35%	
May. 2005	3.25%	1.55%	1.35%	
Jun. 2005	3.25%	2.0%	2.0%	Update rate since more than 25 bps change
Jul. 2005	3.25%	2.0%	2.0%	

Example 2 – relatively level interest rate environment

This example does not automatically set each calendar year from a set month. The initial rate is set for the contract form is based off a one month average with a one month lag for a contract form that will launch in January of 2004. The range is plus or minus 25 basis points. So for issues in January 2004, the rate is based on November 2003 monthly average. For all issues after January 2004, the rate will change only if there has been a 25 bps move or more in the 5 year CMT rate. These examples will look at what happens in relatively level interest rate environment – keeping in mind that the NF rate MUST be updated so all 5 year CMT rates upon which the nonforfeiture rate is based occur within 15 months from contract issue date.

Date	5 Year CMT Monthly Average	Potential NF rate	Actual NF Rate	Comments
Nov. 2003	3.0%	N/a	N/a	Month for base rate – “sets a starting peg in the ground”
Dec. 2003	3.1%	N/a	N/a	One month lag
Jan. 2004	3.1%	1.75%	1.75%	Initial Rate for block
Feb. 2004	<b>3.3%</b>	1.85%	1.75%	
Mar. 2004	<b>3.5%</b>	1.85%	1.75%	
Apr. 2004	3.5%	2.05%	2.05%	
May. 2004	3.5%	2.25%	2.05%	
Jun. 2004	3.5%	2.25%	2.05%	
Jul. 2004	3.5%	2.25%	2.05%	
Aug. 2004	3.5%	2.25%	2.05%	
Sep. 2004	3.5%	2.25%	2.05%	
Oct. 2004	3.5%	2.25%	2.05%	
Nov. 2004	3.5%	2.25%	2.05%	
Dec. 2004	3.5%	2.25%	2.05%	
Jan. 2005	3.5%	2.25%	2.05%	
Feb. 2005	3.5%	2.25%	2.05%	
Mar. 2005	3.5%	2.25%	2.05%	
Apr. 2005	3.5%	2.25%	2.05%	
May. 2005	3.5%	2.25%	2.25%	Must be updated since 3.3% occurred more than 15 months ago
Jun. 2005	3.5%	2.25%	2.25%	
Jul. 2005	3.5%	2.25%	2.25%	

Example 3 – relatively level interest rate environment

This example does not automatically set each calendar year from a set month. The initial rate is set for the contract form is based off a one month average with a one month lag for a contract form that will launch in January of 2004. The range is plus or minus 25 basis points. So for issues in January 2004, the rate is based on November 2003 monthly average. For all issues after January 2004, the rate will change only if there has been a 25 bps move or more in the 5 year CMT rate. These examples will look at what happens in relatively level interest rate environment – keeping in mind that the NF rate MUST be updated so all 5 year CMT rates upon which the nonforfeiture rate is based occur within 15 months from contract issue date.

Date	5 Year CMT Monthly Average	Potential NF rate	Actual NF Rate	Comments
Nov. 2003	3.0%	N/a	N/a	Month for base rate – “sets a starting peg in the ground”
Dec. 2003	3.1%	N/a	N/a	One month lag
Jan. 2004	3.1%	1.75%	1.75%	Initial Rate for block
Feb. 2004	<b>3.3%</b>	1.85%	1.75%	
Mar. 2004	3.3%	1.85%	1.75%	
Apr. 2004	3.3%	2.05%	2.05%	
May. 2004	<b>3.5%</b>	2.25%	2.05%	
Jun. 2004	3.5%	2.25%	2.05%	
Jul. 2004	3.5%	2.25%	2.05%	
Aug. 2004	3.5%	2.25%	2.05%	
Sep. 2004	3.5%	2.25%	2.05%	
Oct. 2004	3.5%	2.25%	2.05%	
Nov. 2004	3.5%	2.25%	2.05%	
Dec. 2004	3.5%	2.25%	2.05%	
Jan. 2005	3.5%	2.25%	2.05%	
Feb. 2005	3.5%	2.25%	2.05%	
Mar. 2005	3.5%	2.25%	2.05%	
Apr. 2005	3.5%	2.25%	2.05%	
May. 2005	3.5%	2.25%	2.05%	
Jun. 2005	3.5%	2.25%	2.05%	
Jul. 2005	3.5%	2.25%	2.25%	Must be updated since 3.3% occurred more than 15 months ago

Example 4 – real life 5 year CMT averages

<http://www.federalreserve.gov/releases/h15/current/h15.pdf> and  
<http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/index.html>

	(1)	(2)	(3)	
	Rate	NF Calc	New rate	
Original Rate			2.94	assumed as a given
July-02	3.81	2.56	2.94	
August-02	3.29	2.04	2.04	
September-02	2.94	1.69	2.04	
October-02	2.95	1.70	2.04	
November-02	3.05	1.80	2.04	
December-02	3.03	1.78	2.04	
January-03	3.05	1.80	2.04	
February-03	2.90	1.65	2.04	
March-03	2.78	1.53	1.53	
April-03	2.93	1.68	1.53	
May-03	2.52	1.27	1.53	
June-03	2.27	1.02	1.02	
July-03	2.87	1.62	1.62	
August-03	3.37	2.12	1.62	

(1) = monthly average 5 year CMT from above named sources

(2) = monthly average minus 125 bps

(3) = new rate according to a value triggered method with range of plus or minus 50 bps