

**1994 VALUATION ACTUARY  
SYMPOSIUM PROCEEDINGS**

**SESSION 2**

**Life and Annuity Valuation Issues**

**Errol Cramer**

**Brian Kavanaugh**

**Howard H. Kayton**



## LIFE AND ANNUITY VALUATION ISSUES

**MR. ERROL CRAMER:** I'm a senior actuary with Allstate Life Insurance Company, and I serve as the company's appointed actuary. I will briefly cover an update on the Separate Accounts Technical Resource Group. First, though, I would like to introduce the other speakers. Brian Kavanaugh will cover the life valuation issues. Brian has been very active in Guideline XXX, which of course, is very relevant to our topic. Brian is chief consulting actuary with Integrated Data Processing, where his specialty is life insurance, in particular, product design and valuation issues. Brian has authored quite a few articles on XXX, including those published in *Contingencies*, *Actuarial Digest*, *Product Development Newsletter*, and *Broker World*. So, Brian's very well-qualified to talk on XXX. Howard Kayton is executive vice president and chief actuary with Security First Life Insurance Company. Howard has responsibility for his company's valuation and industry activities. Many of you are probably aware that Howard chairs the Annuity Nonforfeiture Technical Resource Group, and Howard will be providing an update.

Let's now get to separate accounts. By way of background, there's a tremendous volume of assets in separate accounts, and these assets have been growing at a very rapid pace. This has led to some regulatory concern, in particular, regarding two key points. The first point has to do with the policyholder equity aspects of separate accounts, specifically, equity between the rights of the general and separate account policyholders in the event of an insolvency. If you have a separate account without guarantees, the assets are insulated from the general account, but the separate account policyholders bear all the experience gains or losses so equity is not an issue. However, this is not the same when you have a separate account product with guarantees, especially if that product could be issued equally as well in the general account. Take, for example, the prevalence of GICs issued in separate accounts because of unease about the Executive Life insolvency. Pension administrators want to make sure they have security of their assets, so, these GICs are issued in a separate account, and in case of insolvency, they do have first priority to those assets. The equity question then is whether the individual

general account policyholders, who have less clout or less sophistication, are left at a disadvantage?

The second issue has to do with the lack of consistent regulation. There is regulation on establishment of separate accounts, but there does not appear to be standardized regulation of the types of benefits and products that can be issued in a separate account, nor standardized regulation of the valuation issues.

These two issues have led to heightened NAIC concern with separate accounts, and the result was formation of the NAIC Separate Accounts Working Group together with an advisory technical resource group. The first order of the day for the technical resource group was to do a survey of what products have been sold in separate accounts as this information is not available directly from the annual statements. The survey results showed that the separate accounts were, as one would anticipate, primarily in respect of three major products: (1) group immediate annuities, i.e., annuity payments to pension plan retirees, (2) GICs, which I mentioned are being written in separate account because of the desire for extra security on those assets, and (3) variable products, primarily variable annuities, which is what one thinks of as a typical separate account product. So, by and large, there are no surprises from the survey.

Let's look at the conclusions of the technical resource group.

The first conclusion is that there is no immediate crisis. Rather, there are issues that need to be resolved in due course, and the technical resource group will probably be in formation for a while addressing these issues.

The second conclusion is that, effectively, there already is some conformity in regulation. In particular, the one area where special rules are needed is in definition of the valuation and solvency requirements for separate account group annuities, and this is addressed by New York Regulation 128. By and large, the major writers of group annuities, are either

licensed directly in New York, or have a New York subsidiary and are New York authorized reinsurers. One way or another, they fall under New York valuation law, and de facto, New York Regulation 128 applies. Likewise, New York Regulations 126 and 127, which deal in part with separate account valuation issues, have influence beyond the New York companies alone.

The third conclusion has to do with whether surplus could be "hidden" in the separate accounts. This relates to the separate account versus general account policyholder equity issue I mentioned earlier, i.e., is there a favored set of policyholders if the company "hides" surplus in the separate accounts? The technical resource group concluded this is not a concern as there are restrictions on how much surplus can be held in the various separate accounts. Even where there is surplus in the separate accounts, the rights of the separate account policyholders extend only to assets backing their liabilities, and any surplus left over after separate account liabilities have been met reverts back then to the general account.

The final conclusion is that the general account policyholders are not disadvantaged per se because of separate account products with guarantees, provided adequate valuation and solvency controls are maintained. For example, a question one could ask is whether the general account policyholders are better off if a company were not to sell separate account GICs. Provided the separate account GICs are properly priced and maintain the right level of risk-based capital (RBC), it's no different than any other investment a company gets into, and profits will flow through to the general account. So, this is really more a matter of ensuring that reserves and RBC are at the right levels.

Let's now look at some of the issues that the technical resource group will be working on. First is the commissioner's annuity reserve valuation method (CARVM) for variable annuities (VAs). In prior years, there had been some discussion about whether VA CARVM meant having to hold full-fund balances or something less, i.e., essentially cash-surrender values. I believe that the NAIC, and the individual states, now accept

that it is valid to hold something less than the full-fund balances. One could end up with surplus in the separate account to the extent assets equal to account balances are required to be held in the separate account and the amount of these assets would then exceed the VA CARVM reserves. This could lead, at least on the surface, to a strange-looking result (at least one real life situation has been given by the regulators) of a company reporting more surplus in the separate account than in its general account. For example, a company might hold an initial reserve of less than a dollar for every dollar deposited in the separate account, and then, in the general account borrow money to provide for the up-front acquisition expense. The general account will then have a liability for the borrowed money and its surplus could be less than what's shown in the separate account. I personally don't see why this should be considered a concern at all as I view it as purely an accounting issue. In any case, the principle of allowing surplus to be in a separate account is, I think, widely accepted, and now it's a question of whether there should be any restriction on how much surplus can be in a separate account.

Another issue is borrowing by securitization of the separate account loads. I view this as no different than an insurer entering into reinsurance for funding its surplus needs.

Another issue has to do with retaining surplus in the separate account versus the general account, in particular, regarding the differences in impact on RBC and the asset valuation reserve (AVR). Note that currently RBC and AVR are required on any surplus in the separate account.

Then there are special products that need to be addressed, e.g., modified guaranteed annuities, and synthetic GICs. Technically, synthetic GICs are not a separate account product because, even though the assets are insulated from the general account, the assets are owned directly by the policyholders rather than the insurer. So, they are in reality an off-balance-sheet liability. There are no defined valuation requirements for synthetic GICs, although, I know at least one state takes the position that these must be covered in the valuation actuary's opinion on cash-flow testing.

## LIFE AND ANNUITY VALUATION ISSUES

As a final issue, there are the accounting issues, for example, how to account for VA CARVM, whether or not to report surplus in the separate account, how to show surplus in the blue book and green books, and so on.





## REGULATION XXX

**MR. BRIAN KAVANAGH:** Regulation XXX may have a greater impact on the life insurance industry than any other change in the last 15 years. Almost every aspect of how business is conducted will be affected. Issues include marketing strategy, product design, pricing, valuation, financial reinsurance, tax accounting, and financial reporting. Valuation actuaries should be aware of anticipated changes throughout their companies and plan accordingly. It would be a mistake to assume that new product designs will not be substantially different.

By requiring multiple tests, the regulation is a radical departure from traditional valuation approaches where a single method is specified. The two main reserve methods are unitary and contract segmentation; however, depending on the situation, up to 13 basic and deficiency tests could apply to a single policy. This is further complicated by requiring variations in assumptions, such as different valuation mortality rates, between tests. The statutory reserves are the highest produced by all the required tests.

The model regulation is expected to be adopted by the NAIC at its December 1994 meeting. Although the most current draft specifies an effective date of January 1, 1995, some states may allow more time for companies to comply. This will continue an uneven playing field between New York and non-New York companies in product design. New York companies, which have continued premium guarantees to maintain market share, may be forced to retrench.

### **Regulation's Main Features**

In-force business is not affected. The principal lines of new business that will be affected are:

1. Nonuniversal life with nonlevel premiums and/or benefits.
2. Universal life policies that contain either "no lapse" or significant cost of insurance guarantees beyond the fifth year.

Other business, such as business with unusual cash values, is also subject to specialized segmented testing.

The unitary method, by which many term policies are reserved today, assumes the present value of valuation premiums until expiry is a percentage of the present value of gross premiums. This percentage is applied to each gross premium to determine valuation premiums. The manipulation of this percentage by increasing the gross premiums at the later durations can allow companies to set basic and deficiency reserves at any level. Multiple testing eliminates the effect of the manipulation of the unitary reserves.

Under the segmented reserve method, policy durations until expiry are divided into separate independent segments based on guaranteed gross premiums and deficiency mortality.

The commissioner's reserve valuation method (CRVM) unitary method is used in the first segment and net level premium unitary method in each subsequent segment. The percentage a valuation premium is to a gross premium within any segment is independent of premiums in any other segment. This prevents the unitary-type manipulation of the premiums at the later durations to reduce reserves at the earlier durations.

We can compare the segmented reserve method to the unitary method:

1. At any time, the present value of future benefits are equal.
2. At issue, the present value of net level premiums are equal.
3. One year after issue, the present value of CRVM premiums are equal.
4. The unitary method has either deficiencies in every year or no deficiencies. In the contract segmentation method, there may be deficiencies in some segments, particularly the first, but not others.

## LIFE AND ANNUITY VALUATION ISSUES

Chart 1 shows a typical pattern of gross to valuation premiums under both methods. In the unitary, the valuation premiums are lower than the gross in every year. There are no deficiency reserves. In segmentation, the valuation premiums are greater than the gross in the first year only, creating deficiency reserves during that period.

In order to set segments, the first segment starts at issue and continues for at least one policy year.

$$R(t) = \frac{\text{Mortality rate}_{x+t}}{\text{Mortality rate}_{x+t-1}}$$

$$G(t) = \frac{\text{Gross premium}_{x+t}}{\text{Gross premium}_{x+t-1}}$$

The second segment starts at the beginning of the first policy year that the ratio of the gross premium over the prior year is greater than the ratio of the corresponding deficiency reserve valuation mortality rate over the prior year. Any set of select mortality factors, elected by the insurer, are assumed to apply to every policy year from issue.

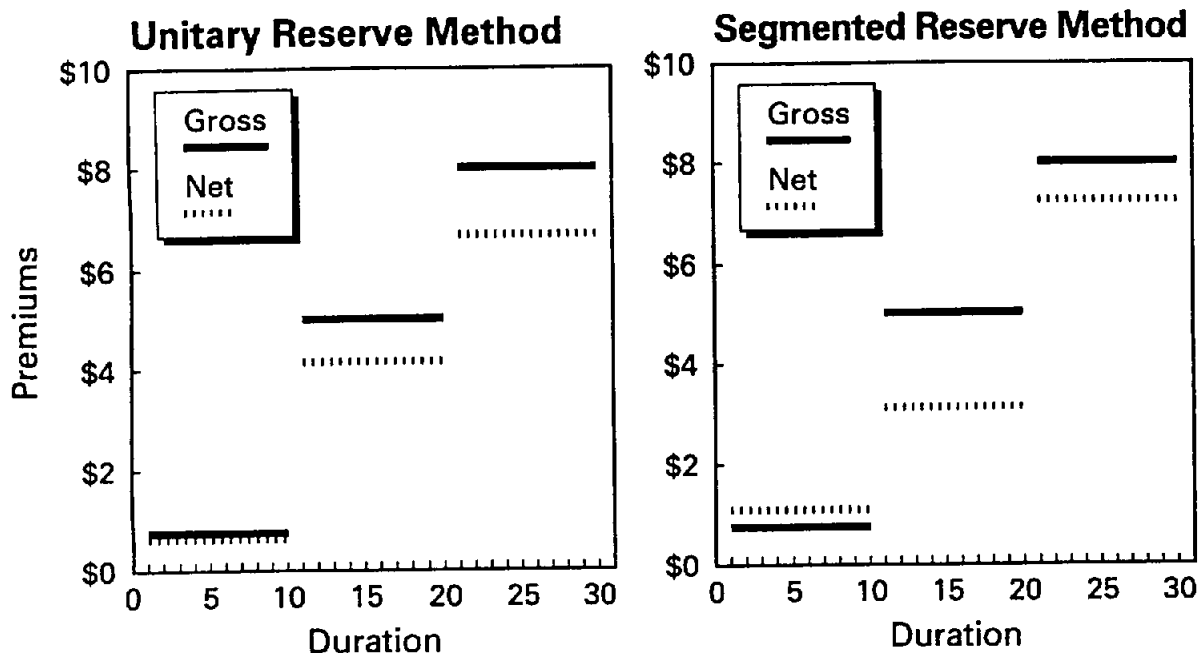
The start of any subsequent segment is determined in the same manner as the second segment except that the base select factors (BSFs) may not be used since their use is restricted to the first segment.

In determining the gross premium ratio for any policy year, the policy fees must be excluded if they are a level dollar amount and are payable for the same premium-paying period as the policy.

The mortality rate ratio for any policy year may be increased or decreased by 1%, at the option of the insurer. In any event, if this option is elected or not, the ratio may not be less than one. This will help in situations where a segment could be unexpectedly ended or continued due to gross premium rates per 1,000 being carried to two decimal places and valuation mortality per 1,000 being carried to more than two decimal places.

CHART 1

Segmented and Unitary Reserve Methods



In an ART policy the onset of a new segment can be quite random although the 1% valuation ratio variation will be helpful (Chart 2). In a ten-year renewal term policy, the segments are each ten-year period.

Regarding minimum valuation mortality, in addition to the ten-year 1980 CSO select factors, the regulation introduces much lower 15-year new BSFs. These factors were developed from recent intercompany experience and will reduce deficiency reserves created by the regulation or by existing methods:

1. 120% of these factors, capped at 100, can be used for deficiency reserves.
2. 150%, capped at 100, can be used for basic reserves.

BSFs cannot be used beyond the first segment, but if the first segment is less than ten years, the existing ten-year select factors can be used for the balance of the ten-year period.

## LIFE AND ANNUITY VALUATION ISSUES

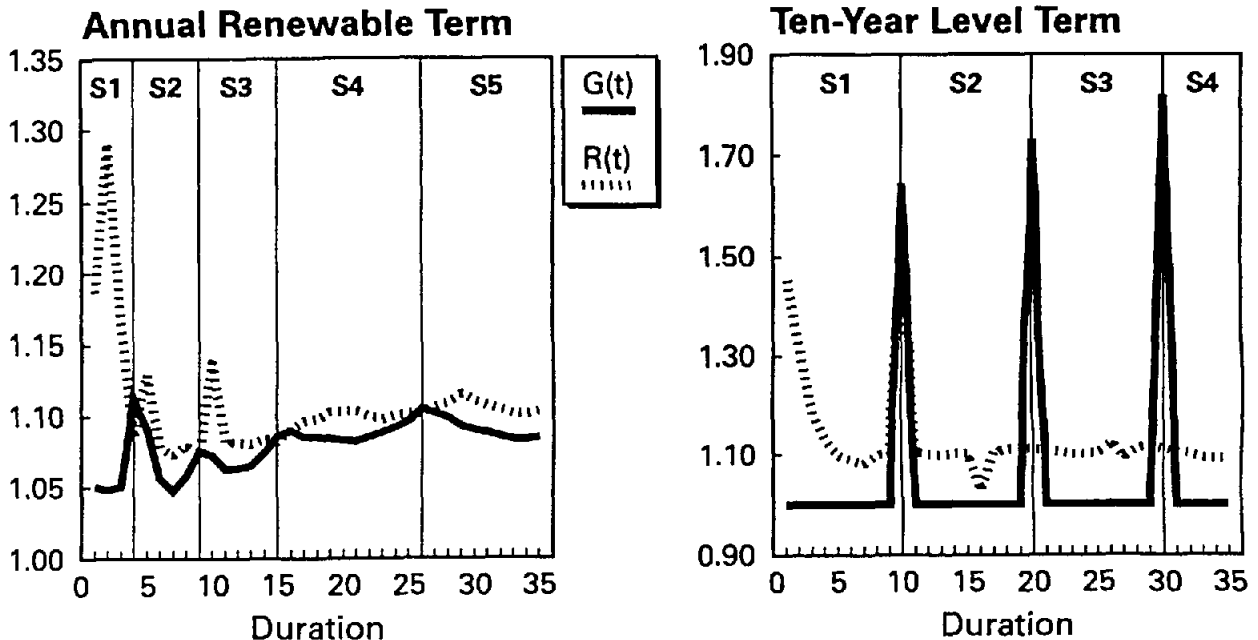
In a comparison of basic valuation selection factors (Table 1), the reductions in early years are significant. Table 2 shows a comparison of deficiency valuation selection factors. The deficiency reserves are determined by using the same segments as basic, and using 120% of the BSFs and maximum interest rates.

The deficiency reserve is the present value of any positive difference between the valuation premiums and the gross premiums less the difference between the basic reserve and the basic reserve recalculated using deficiency assumptions. It cannot be less than zero. Any deficiency in the first segment, if it is five years or less, is ignored. This approach is general and also applies to values determined by continuous functions.

Table 3 shows minimum nondeficient premiums. The jump between the first five-year term and second five-year term is considerably greater than the jump between the second and third terms because the BSF cannot be used beyond the first five years, the first segment.

**CHART 2**

### Levelized Premium Segmentation Method



**TABLE 1**  
**Comparison of Valuation Selection Factors**  
**Male Age 45**

Duration	Current	Proposed Basic Reserves		
		Combined	Nonsmoker	Smoker
1	65%	39%	38%	44%
5	80	71	71	81
10	90	75	71	81
11	100	80	74	84
15	100	96	86	100
16+	100	100	100	100

**TABLE 2**  
**Comparison of Valuation Selection Factors**  
**Male Age 45**

Duration	Current	Proposed Deficiency Reserves		
		Combined	Nonsmoker	Smoker
1	65%	31%	30%	35%
5	80	56	56	65
10	90	60	56	67
11	100	64	59	70
15	100	77	69	85
16+	100	100	100	

TABLE 3  
Minimum "Nondeficient" Premiums<sup>1</sup>

Attained Age Male Nonsmoker	5-Year Term			10-Year Term	
	Initial Premium <sup>2</sup>	First Renewal Period	Second Renewal Period	Initial Premium	Renewal Period
35	\$0.95	\$1.75	\$1.84	\$1.24	\$2.17
45	1.98	3.56	3.78	2.62	4.62
55	3.52	7.77	9.24	5.32	11.71

<sup>1</sup> 1980 CSO male nonsmoker age nearest birthday at 5%, with select factors, semicontinuous basis, CRVM for initial period, net level method for renewal period.

<sup>2</sup> These are only the renewal net premiums for the initial segment; there is no minimum nondeficient premium when the initial segment is five years or less.

An unusual cash value, based on guarantees at issue, occurs when the increase in cash value from the prior year-end is greater than 110% of the gross premium plus 110% of interest plus 5% of the first-year surrender charge, if any. Interest is the annual nonforfeiture rate times the sum of the prior cash value and the gross premium.

The policy, from issue until expiry, is broken down into segments among unusual cash values. Cash values at the end of a segment are treated as endowments and cash values from any prior segment are treated as single premiums. The segmented method is then used.

Basic reserve assumptions are used. No deficiency testing is required since there is no associated gross premium.

Universal life cannot have unusual cash values unless they are guaranteed at issue as in fixed premium universal life.

## 1994 VALUATION ACTUARY SYMPOSIUM

Regarding universal life guarantees, segmented testing for a universal life policy is required when it is guaranteed to remain in force for more than five years, subject only to payment of specified or deficient premiums. Under the universal life model regulation, these guarantees are ignored, or can be compensated for, in determining basic or deficiency reserves.

Specified premiums, if any, are those stated in the policy. A deficient premium is the maximum guaranteed monthly deduction if it is less than the monthly 1980 CSO rate with or without ten-year select factors. The BSFs cannot be used. The introduction of deficient premiums is new and copied from the New York version. It is meant to close a perceived loophole whereby policies could be guaranteed to remain in force by reducing guaranteed cost of insurance charges.

For secondary guarantee reserves, the policy is tested as a term policy under the regulation:

1. with coverage to the end of the guaranteed period.
2. assuming gross premiums are equal to the specified premiums, if any, followed by the deficient premiums.

Deficiency reserves are calculated as outlined previously.

Statutory reserves produced are held if they are higher than under the universal life model regulation.

For unitary reserves as cash values, at insurer's option, any positive basic unitary reserve, corresponding to the end of each segment, can be used as a pure endowment, and any positive basic unitary reserve, corresponding to the end of any prior segment, can be used as a single premium.



### **New York Regulation 147**

The New York insurance department published Regulation 147 on January 5, 1994, republished May 4, 1994 and republished again on July 13, 1994. Unless it is further republished, it can be adopted at any time. It is likely that a decision will be made after the NAIC task force meeting starting on September 16, 1994.

The New York insurance department acted before the NAIC because of an urgent need to correct problems that are peculiar to New York. In general, companies are not using the same reserve methodology and are creating an uneven playing field in product design.

The NAIC version has copied verbatim many New York provisions, but there are differences.

The regulation is expected to be adopted later in 1994. The required reserve tests will depend on when policies are issued.

For licensed insurers, any policy issued after January 1, 1994 will be considered a new issue. In-force business is all other business and will be subject only to certain provisions. The principal difference is that segmented reserve testing will be required only on new issues.

For accredited reinsurers, new issues will start January 1, 1995, unless the source of the new business is from a New York insurer when the earlier date will apply.

Regarding financial statements, both insurers and accredited reinsurers will be required to comply starting with statements filed for the period ending December 31, 1994. The regulation is extraterritorial. That is, all business, irrespective of source, must be brought into compliance. Business written by an accredited reinsurer outside New York after 1994 must comply as a new issue.

## 1994 VALUATION ACTUARY SYMPOSIUM

The major change is that the unitary reserve test must be applied to all the in-force policies unless they qualify for an alternate test or exemption as specified in the regulation. If reserves are to be reduced by the regulation, prior approval from the superintendent must be obtained.

The BSFs can be increased provided they do not decrease with duration. The superintendent must approve.

For segmentation, basic mortality is used instead of guaranteed mortality. This could be significant because the BSFs for basic mortality can be increased to mask increases of over 100% in guaranteed gross premiums without starting a new segment. The BSFs for deficiencies would not be affected even though mortality antiselection could be expected.

The regulation specifies in determining segments how valuation mortality ratios are adjusted in going from one set of select factors to another set or to ultimate rates. In general, the denominator must be on the same basis as the numerator. The NAIC version does not address the issue.

Additional reserves for the immediate payment of claims are required:

1. If continuous or semicontinuous functions are used, no adjustment is needed.
2. If curtate functions are used, assume the death benefit is paid two months after death if there is no interest payable or at death if interest is payable.

The NAIC version is silent, and presumably such additional reserves, if any, are to be handled as required by Guideline XXX, also. This guideline is similar, but there is a provision that requires no additional reserves if the reserves in general have sufficient margins. This difference between the NAIC and the New York version can be up to half a year's interest on the total reserves.

## LIFE AND ANNUITY VALUATION ISSUES

Regulation 147 incorporates a version of the NAIC universal life model regulation. There are two main differences:

1. Riders are ignored (to be reserved separately).
2. Expense allowances due to structural changes must be amortized from the date of change. It may be worth considering this approach as it will reduce reserves. The "proportional method" referred to in the NAIC model regulation is not referred to.

It is expected that many states that do not have universal life regulations will also take this approach. As New York found out, it is hard to add universal life secondary guarantee provisions when there is no universal life valuation regulations.

In both versions, the secondary guarantees are defined similarly, however in the New York version, the two types of secondary guarantees are tested separately while in the NAIC version the tests are combined.

The guaranteed period when deficient premiums occur is to expiry in the New York version and to the end of the last year in which a deficient premium occurs in the NAIC version.

The California Method, which allows basic reserves to be set halfway between the account value and surrender, is permitted.

There will be states in addition to New York that will have their own versions of Regulation XXX. The California insurance department has taken exception to some of the current provisions in the NAIC version, and California's track record is to make whatever changes it thinks are appropriate to California law; e.g., in universal life, reserve interest rates cannot exceed guaranteed interest rates.

## 1994 VALUATION ACTUARY SYMPOSIUM

Other states will have problems with their existing laws. It may not be possible to override a law with a regulation. For example, some insurance departments may consider the deficiency exemption when the first segment is five years or less to be contrary to their existing law.

The most important state variation, however, will be the effective date of the regulation.

### Summary

Regarding BSFs, the contract segmentation method works well in preventing manipulation of valuation premiums in establishing reserve levels. However, using the end of the first segment to determine when BSFs can no longer be used is illogical in many normal situations.

The continued use of BSFs would be more appropriately based on how competitive gross premiums are within each segment. If premiums are as competitive as new issue premiums, then the continued use of the BSFs should be allowed.

The use of the unitary reserves is a help since the segmentation process itself can produce deficiency reserves where none exist. Take, for example, a 20-year term plan with current premiums guaranteed for 15 years. The last five years would probably be in a different segment. Unless the guaranteed premium was greater than or equal to the level five-year valuation premium at issue age 15 years older, there would be deficiencies in the last five years. Using the unitary reserve at the end of the 15th year as a single premium, reduces the valuation premium and the possibility of deficiencies. However, the unitary method can produce negative reserves for long periods and may be of limited use.

Basing segments on guaranteed premiums and arbitrarily restricting the new Select factors to the first segment can produce illogical results when designing products to avoid

## LIFE AND ANNUITY VALUATION ISSUES

deficiencies. For example, contrary to normal expectation, deficiencies can be avoided by:

1. lengthening the guaranteed period as in the case of the 20-year term policy.
2. reducing guaranteed premiums to increase the length of the first segment and the continued use of BSFs.
3. increasing the valuation mortality to increase the length of the first segment and the continued use of BSFs.

Perhaps the regulation should not require deficiency reserves when any one of these adjustments would eliminate deficiencies.

The biggest flaw in the regulation is that current premiums are ignored in determining either basic or deficiency reserves. For example, a likely new product design would be an indeterminate term policy with level current premiums and ART-like guaranteed premiums. Since reserves are based on guaranteed premiums, there would be no reserve buildup. Unless reserves are arbitrarily set aside, the current premiums would be inadequate without reserve releases to provide the benefits at the later durations.

If the change is made to use current premiums in determining basic reserves, it would be logical that current premium changes after issue should require that reserves be recalculated based on the new structure and the actual premium paid to date. Reserves would then be consistent with the actual premiums paid. Otherwise abuse is possible. Companies could set current premiums at issue to establish desired reserve levels when they do not reasonably expect to charge such premiums.

The concept of deficient premiums in universal life policies will restrict the design of policies targeted at insureds who prefer mortality cost guarantees over other guarantees. This is the first attempt to isolate an element in a plan and require that it be more than adequate. Traditionally it has been only required that combined assumptions be adequate.

## 1994 VALUATION ACTUARY SYMPOSIUM

If the concern is that earlier lower guaranteed cost of insurance charges could be offset by later charges that are higher than 1980 CSO mortality, limit such higher charges to 1980 CSO mortality. With this limitation, the only viable way that deficiency reserves could be avoided under the universal life model regulation would be to lower guaranteed interest rates. This would appear to be legitimate. An insured should be able to choose lower mortality cost guarantees in lieu of higher interest guarantees.

Unlike all other states, New York allows only one universal life policy. The position that a universal life policy can be designed for a section of the general public is not acceptable. This is enforced under the department's discretionary powers when policy forms are approved. Restricting design will not be as major an issue in New York as in other states.

The main goals of the regulation are to make companies:

1. adequately reserve term and term-like policies.
2. shorten premium guarantee periods to avoid deficiency reserve.
3. increase premiums to avoid deficiency reserves.

If basic policy design or a company's marketing strategy does not change, the regulation will succeed. This, however, is very unlikely. Many companies will establish the reserve levels they can afford and set the guarantees accordingly. The dominant premium guarantee for many companies will likely be an ART-type with rates equal to deficiency valuation mortality.

The effect of regulation may well be:

1. The continuation of inadequate reserves. A 20-year level term contract based on current premiums will generate no reserves if the guaranteed premiums are ART.
2. Longer but higher premium guarantees. Currently it is necessary to limit guarantees to the early durations with higher than 1980 CSO rates at the later durations to manipulate the unitary method.

## LIFE AND ANNUITY VALUATION ISSUES

3. Lower current premiums and higher commissions. Since guaranteed premiums will not vary between companies, to penetrate the marketplace, a company may be forced to either reduce current premiums or increase commissions. This will be especially true for companies with poor financial ratings competing with companies with good financial ratings. Up to now, these companies have maintained market share by offering longer guarantees. Lower current premiums or higher commissions may place these companies in greater short-term jeopardy than the pre-Regulation XXX guarantees. If this in fact happens, then the regulation will have missed its goals.





## LIFE AND ANNUITY VALUATION ISSUES

**MR. HOWARD H. KAYTON:** I will briefly outline how we got to the present proposal, then review each of the major features of the proposed law (appendix at the end of this write-up), and finally review the prognosis for passage.

The process began four years ago, when I, and several other actuaries, agreed to a one-year project to help California and the NAIC regulate purported abuses of the two-tier annuity. I won't go through the long history of what ensued; it is documented in the April 13, 1994 Report that you have in the notebook of handouts to this meeting. I will, however, note that the present form of the proposed law (which also is included in your notebook) was the result of at least three major exposures to the industry, and the result of extensive discussions with the regulators (which are still going on). It represents compromises on the part of regulators, as well as the members of the resource group. No individual in either of those two groups would have written the law exactly as it has been written. Instead, it is an attempt to develop uniform legislation that will be acceptable to all state insurance departments, and it should be viewed in that context.

The presentation of features that I will make are in order of importance to actuaries. Also, when you get a chance to read the law, you will probably find it difficult to match those provisions to the features that I describe. I hope you won't find provisions in the law that are opposite in context, since unlike most laws, nonforfeiture law text is generally written by actuaries, not lawyers. It is actuary-friendly, although the trend over the past few revisions is opposite in direction.

The present process of rate filing of annuities requires that an actuarial demonstration be submitted with each filing. However, once filed, there are no further requirements for demonstration of compliance. The proposal does away with the demonstration, but requires that a qualified actuary prepare a certification that he or she keeps on file and submits when requested by the regulators. Such certification must be updated every time that guarantees are extended, that is, when interest rate guarantees are renewed, bonuses

declared, or any benefits are added. This is likely to be every year. The Academy is presently considering the format and rules for such certifications.

The present law, which was developed when most deferred annuities were annual premium types, describes two types of designs: the deferred annuity that provides continuous access to its cash value, and the more obscure design, the no-cash-value annuity, which appears to have been included solely for the benefit of one large New York company that specializes in the teachers' market.

In the new law we have kept those two designs and are adding a third category that would permit the CD annuity essentially in the many forms that it is being issued today, but on a more restricted basis. Companies are split on whether or not this product can be issued under the present law, but the reality is that it is. We have put restrictions on it to avoid "trapping" an unsophisticated buyer.

Among other restrictions, the guarantee periods allowed are three to ten years, the interest rate cannot decrease over any guarantee period, the account value must be available in a lump sum at the end of the guarantee, and annuities cannot be provided over less than a five-year payout period.

The next feature has become the most controversial issue. The present law allows sales loads (and surrender charges) that most companies would view as excessive and that are certainly not competitive. Furthermore, many companies issue flexible premium policies that for the most part receive only a single premium. The proposal makes no distinction between single premium and flexible premium policies. Note that the 10% maximum is the maximum reduction from the highest value available (before reduction for sales loads) to determine the lump sum payable in the event of early termination. Thus, it includes two-tier interest differentials, front loads, and surrender charges.

## LIFE AND ANNUITY VALUATION ISSUES

The criticisms that have been voiced are that the 10% is an arbitrary figure that has not been adequately tested. The reality is that most life companies presently live within the 10% limit. The major critic of the proposed 10% limit has requested that the NAIC do extensive modeling to test how to assure equity among lump-sum terminators versus annuitants, allowing for differences in investment duration. The issue is the definition of *equity*. Commissioner Dwight Bartlett characterized the opposition to the two-tier annuity as not primarily actuarially based, but concern about deception. How can one model deception? I hope this will be put to bed at the next Life and Health Actuarial Task Force (LHATF) meeting.

Next is just a reminder that this proposed law will apply to all deferred annuities to avoid the issue of "pseudogroup." It also brings together fixed and variable nonforfeiture values on a more consistent basis.

The grade-in requirement in the present law makes CD annuities unacceptable. It requires a grade-in to the maturity value. Actuarial Guideline III defines that maturity value to be the cash value at maturity. In the new law, the grade-in is dropped. The only smoothness test is that the ratio of cash value to account value cannot increase by more than 2% in any year (unless it had been 100%). There is no grade-in requirement on decreases in that ratio, thus the cliff surrender charge is permitted.

Also included is a reminder that the 10% requirement has to be complied with at all times. Thus the two-tier annuity is severely restricted in terms of the divergence between account value and cash surrender value.

Under the present law, most actuaries interpret the nonforfeiture law as establishing minimum nonforfeiture values that must be validated only at issue using guarantees in effect at that time. This proposal requires that the values be revalidated every time that benefits are extended.

## 1994 VALUATION ACTUARY SYMPOSIUM

The present law did not contemplate market value adjustments (MVAs). After the passage of the present law, the modified guaranteed annuity model law enabled companies to write MVA products funded by the separate account. Some companies have issued MVAs in the fixed account by using a group contract, which is exempt from the present nonforfeiture law. The proposed law allows for an annuity to have an MVA and be funded through the general account, but only if the state changes its modified guaranteed annuity model law. Such MVAs are made after demonstrating compliance with the nonforfeiture law; i.e., they are not subject to the 10% spread limit.

It is no secret that interest rates have been coming down since 1980. The proposed law specifies a minimum accumulation rate at the time of issue to be at least as great as the least of these three rates. We will also add another restriction, that it not be less than 0%.

The two significant changes are that (1) it applies to both accumulation rates and payout rates, and (2) it may be changed on 60 days notice with regard to balances accumulated from future premiums, but only if that right is reserved by including it in the policy at issue. This will be the true test of the strength of the pricing actuary versus the field force.

We are permitting a company to not be locked into the mortality assumptions applicable to future premiums, provided that the policy reserves this right at issue (something that cannot be done under existing laws). The present law requires that the minimum mortality assumptions and interest rate guarantees are locked in at issue with respect to all future premiums.

Unfortunately, here is a place that the industry really lost. We tried to include an indexed maximum, but the regulators rejected it after initially approving it. The best we could do was to raise the \$30 in the present law to \$40.

## LIFE AND ANNUITY VALUATION ISSUES

The major change from the pricing actuary's viewpoint is that the expense charges are after validation of the nonforfeiture values, so that validations won't depend on the size of the account.

A major compromise, or more correctly, an acceptance of the regulatory position, is that new policies will have to guarantee the larger of the two payouts, as shown. Note that if you take this together with the proposed Actuarial Guideline GGG, you will have to reserve for current annuity payouts, even though they are nonguaranteed elements.

As far as the policy provisions, it seems reasonable to require this since, if the company has agreed to pay out the cash value, it should also be willing to apply that cash value to provide a payout at then current payout rates. I do not think that GGG is reasonable in requiring companies to reserve for elements that are nonspecific and under the control of the company.

The right to defer payment of surrender value is taken from the proposed life nonforfeiture law, and seems to be reasonable. The addition is six months of interest.

The death benefit for the modified guaranteed annuity has become controversial, and we are recommending that it be changed. As it stands, the company can't win. Our recommendation will be to change it to the larger of (1) the lump-sum death benefit unadjusted or (2) the cash surrender benefit, adjusted by the MVA. It gives the company a little more room where there is a large upward adjustment.

The proposed law also has a restriction on the amount of interest that you can guarantee in a variable annuity (the "roll-up benefit"). The limit is equal to the life insurance valuation rate.

If any of you want to see a more definitive analysis of the impact of this proposed law on product development you may request a copy of Tim Pfeifer's analysis that was

## 1994 VALUATION ACTUARY SYMPOSIUM

sponsored by the Product Development Section, by calling Tim at M&R in Chicago (312) 726-0677.

Before discussing the prognosis for passage, I would like to raise another criticism that could be advocated regarding this proposed law. It is the issue of rate regulation. As drafted, the proposed law does in fact impose minimum accumulation rates, and maximum charges. It could then be characterized as rate regulation. However, it is difficult for me to envision how nonforfeiture values of an interest-sensitive product can be required to be reasonable, without imposing rate regulation of some sort.

Finally, as a result of some scenario testing, we concluded that the most likely timetable for changes to new policies will be in 1998, seemingly a long way off. This could be shortened by one year if the regulators move quickly and approve the proposal at the next meeting. I have received additional correspondence that makes 1998 appear to be optimistic. I hope not, but in working with regulators I find that they keep me guessing (as they have for the past four years). It is very important that passage occurs before we have repeats of the preemption of the types we are facing in Florida.

# LIFE AND ANNUITY VALUATION ISSUES

## APPENDIX

### COMPARISON OF CURRENT VERSUS EXPOSURE DRAFT OF MODEL ANNUITY NONFORFEITURE LAW

	Current Law	Exposure Draft
1. Certification by Qualified Actuary	Initially only, with form filing, but only in certain states.	On file at Company at time of issue, and whenever guarantees are extended for renewal years.
2. Permissible Product Designs	a. Continuous Access Annuity (CAA) b. No Cash Value Annuity (NCVA)	a. Continuous Access Annuity (CAA) b. No Cash Value Annuity (NCVA) c. Restricted Surrender Provision Annuity (RSPA)
3. Limitations on Sales Load	35% on first year premiums and 12.5% of subsequent for flexible premium deferred annuities; 10% on single premium deferred annuities.	20% of first \$9,500,* and 10% of balance for all types.
4. Applicability	Individual fixed deferred annuities.	Individual and specified group deferred annuities, both fixed and variable.
5. Limitation on Contingent Charges at Surrender	Based on grade-in to maturity-cash-value.	10% (up to 20% of portion of account from first \$9,500*), reduced by any prior sales loads charged.
6. Renewal	Minimums only defined at issue.	10% (or 20%) limitation reapplied prospectively whenever guarantees extended.
7. Market Value Adjustments	Separate Account Only.	Yes, in General Account (when permitted by state) or Separate Account.
8. Minimum Interest Rate (Not Applicable to Variable Annuities)	3%, on a cumulative basis, during deferral only.	Lesser of (a) 2-1/2%, (b) 5-year Treasury rate minus 1.5% or (c) rate specified by Commissioner, on a year-by-year basis for deferral and payout. Can be changed on 60 days notice regarding future premiums.
9. Mortality Table	None specified.	1983 Table A with Projection Scale G or table approved for valuation purposes. Can be changed on 60 days notice regarding future premiums.
10. Policy Fees Maximum	\$30 plus \$1.25 collection fee, but subject to overall minimum non-forfeiture rules.	\$40 per year, plus \$1.25 collection fee, allowed after determining minimum nonforfeiture values.
11. Minimum On-Benefit Payout	Based on guaranteed payout rates.	Greater of (a) account value applied to guaranteed payout rates or (b) cash surrender value applied to current payout rates.

APPENDIX (CONTINUED)

COMPARISON OF CURRENT VERSUS EXPOSURE DRAFT OF MODEL  
ANNUITY NONFORFEITURE LAW

	Current Law	Exposure Draft
12. Right to Defer Payout of Surrender Value	Up to six months.	Up to six months, with interest at valuation rate, or cash value at payment date, if larger.
13. Death Benefit for MGA	N/A	Greater of lump sum benefit with and without MVA.

\* Indexed to I.R.C. 402(g) maximum as it applies to I.R.C.403(b).

NOTE: Above is a summary of the major features of this law. Please see Exposure Draft of the Proposed Law dated 6/3/94 for a more complete description.



**MR. JOSEPH LEONARD TUPPER III:** This is a question for Mr. Kavanagh. I've seen a little bit of write-up on tax reserves where, perhaps, the same segments as statutory reserves will be used. Is there anything definitive?

**MR. KAVANAGH:** The IRS situation has been discussed at some length, and the initial problem is that the IRS prohibits the use of select factors in determining reserves. Will the IRS allow the use of select factors in determining segmentation, especially if it increases statutory reserves? If the IRS agrees that it's permissible to use select factors for segmentation, is this a new mortality table requiring 26 states to approve before it can be used?

A second major issue is that the tax code states that CRVM is defined by the NAIC. However, can the NAIC define level premium reserves to be CRVM reserves? This may be a definition that the IRS will not accept.

A third issue is raised by New York Regulation 147. Clearly, if the NAIC does not adopt Regulation XXX this year, New York is in a situation where segmented reserves will be not admissible as tax reserves.

These and other issues are being discussed with the IRS, and the IRS probably would like for a company to write requesting a ruling, but to my knowledge, no rulings have been requested.

**MR. ARMAND M. DE PALO:** I'd like to talk about XXX and 147. I'm not going to get into the issue of whether it is good or bad regulation, or aggressive or conservative reserving, which you can evaluate for yourself. But, the regulators had a real issue here, and what's a real embarrassment to our profession is its lack of involvement. This is a fundamental rewriting of the actuarial valuation law beyond only affecting ten-year term, 15-year term, or 20-year term. I've gotten up at every valuation actuary symposium since 1990 and mentioned the need for input of other actuaries. The people who form

the technical resource group to the NAIC represent the "aggressive" companies, and they have fought for what their companies wanted, i.e., little or no reserves on the ten- to 20-year guaranteed products. However, the ramifications of what they have done is going to affect every one of you. And the real embarrassment to our profession is that you did not react. You did not contact your regulators. You did not speak up. When I went up to New York state as a representative from LICONY (Life Insurance Companies of New York) I didn't see many of you coming up with me and saying that there are concerns, and things that affect us administratively.

We are now probably going to be stuck with New York Regulation 147 because it's on the verge of being enacted. The speaker made a statement that is not correct: the New York regulation does, in fact, have the force of law in New York state. Note that New York has always required a company to hold the greater of the unitary or the CRVM reserve, so for a New York licensed company, Regulation 147 is actually a lessening of the reserve standard, and very few New York companies should have major problems with this. But the retroactivity and nuisance aspects, especially since some of the effects in it appear odd, are going to affect all of you. My actuarial staff has invested hours, if not months, studying this law. And when you do reflect on it, you're going to find out that you should have spoken up all along. This is bad regulation. We could have been much better off if we did a modernization of NAIC Guideline IV that really made sense, restricting this to deficiency reserves only, and adopting a real basic reserve law without having to use a complicated segmentation that makes no sense. And I think all of you have to reflect, as it affects your companies, when you get into the implementation and you spend million of dollars on systems, why did we get to this point?

**MR. CRAMER:** I would like to add that this also brings up a tax valuation issue, i.e., is this a change in valuation basis requiring a ten-year spread for tax purposes, or is this an all-at-once tax reserve change? The tax valuation issues in general are probably going to be the stickiest point of the proposed new annuity valuation law, given it is so

different from what was contemplated by the current tax code. This is certainly an issue that needs addressing somewhere along the line.

**MR. BARRY L. SHEMIN:** I have another question on annuity valuation, in particular, GGG. I'm not sure I have this quite right, but it seems to me that the required use of current rates in the annuitization test will introduce considerable volatility in reserves during periods of declining interest rates, i.e., essentially you have to revalue the entire in-force business based on today's low interest rates. And I'm wondering, just what kind of recognition is there of the problems this might cause?

**MR. KAYTON:** A recent draft of GGG has added confusion to the concept of an annuitization floor in GGG. Bob Callahan from New York is extremely interested in this provision and is proposing that, if a contract is providing current purchase rates, there should be a 93% floor to the reserve. Bob is not requiring that there be actual testing of the reserves based upon the current purchase rates. I'm hopeful that the latest draft will convey this intent. I wholeheartedly agree that, if the valuation is going to be tied to current annuity purchase interest rates, it's almost like establishing market value for reserving purposes on annuities, without market valuing the assets. So, I'm hopeful that the wording is just unclear, and that there would not be testing of current purchase rates.

