

RECORD OF SOCIETY OF ACTUARIES 1982 VOL. 8 NO. 4

IMPLEMENTATION OF THE 1980 AMENDMENTS TO THE STANDARD VALUATION AND NON-FORFEITURE LAWS

Moderator: JOHN O. MONTGOMERY. Panelists: WILLIAM CARROLL, GODFREY FERROTT, WILLIAM T. TOZER

1. Status of Enactment
2. Guidelines For Interpretation
3. Model Regulations (including indeterminate premium plans, indexed plans and universal life.)
4. Computer Specifications for reserves and nonforfeiture values using the 1980 CSO Tables.

MR. JOHN O. MONTGOMERY: The 1980 Amendments to the Standard Valuation and Nonforfeiture Laws were drafted with the intent that they be accompanied by more detailed interpretations of certain sections of the laws, and by regulations as needed concerning unusual plans. The Technical Actuarial Staff of the National Association of Insurance Commissioners (NAIC)(A) Life Committee is drafting model interpretations and regulations. The model interpretations will eventually be included in the NAIC Examiners Handbook. Hopefully these model interpretations and regulations will be adopted uniformly by the various regulatory jurisdictions.

The introduction with the 1980 Amendments of the 1980 CSO Tables, the select mortality factors associated with them, and also the dynamic feature of the interest rates requires a greatly expanded set of possible tables. This makes it impractical for the Society of Actuaries to publish sets of tables. Therefore it was decided to develop specifications for a consistent approach in calculating the various values.

These then are the major areas involved in implementing the 1980 amendments. We are indeed fortunate to have a panel with broad and unique experience to discuss the various phases of implementation.

First, William Carroll, Actuary on the staff of the American Council of Life Insurance, will give us the very latest status of enactment of the amendments and discuss some significant variations in enactment. He will also discuss the work of the NAIC Technical Actuarial Staff in developing model interpretations. Mr. Carroll has for the past several years represented the Council at meetings of the NAIC Technical Actuarial Staff.

Second, William T. Tozer, Senior Vice President, Product and Risk Management, Kentucky Central Life will discuss the implications of the 1980 Amendments for the regulation of indeterminate premium plans, indexed plans and universal life plans. Mr. Tozer is the chairman of the American Council of Life Insurance Task Force on Valuation and Nonforfeiture Regulation For New Products, and is also a member of the American Academy of Actuaries Committee on Financial Reporting.

Our last panelist, Mr. Godfrey Perrott, Vice President, Milliman and Robertson Services, Incorporated, will discuss the progress of the Society of Actuaries Committee on Specifications for Monetary values - 1980 CSO Tables. Mr. Perrott is chairman of that committee.

There are a number of other topics relating to the enactment of the 1980 Amendments which have not been discussed by the panel for lack of time. However, we did leave time for questions possibly concerning these other topics as well as to further explanations of the topics discussed. It is important for publication in the Record that as many as possible of the topics of concern related to the amendments be discussed here.

MR. WILLIAM CARROLL: Thank you very much, John. This morning I will report on the status of the NAIC's 1980 amendments and describe some of the questions regarding interpretation of these laws which are currently on the agenda of the NAIC's Technical Staff Actuarial Group.

It has now been nearly two years since the 1980 amendments to the NAIC standard valuation law and standard nonforfeiture law were adopted by the state insurance commissioners at their December, 1980 meeting in New York City.

These amendments, which, as most of you know, make important changes in both the actuarial methods and in the interest and mortality standards used to determine minimum reserves and minimum nonforfeiture benefits, have now been enacted in 39 states. It is expected that they will be seriously considered in each of the remaining 11 states and here in the District of Columbia during 1983. The remaining states are Alaska, Delaware, Illinois, Maine, Mississippi, Montana, Nevada, North Dakota, Ohio, Vermont, and West Virginia.

The 39 states where the amendments have been enacted are listed in ACLI General Bulletin No. 3218, dated August 9, 1982. A few copies of the bulletin will be available following this discussion. The bulletin also gives the statutory calendar year interest rates calculated according to the 1980 amendments from the monthly averages, ending June 30, 1982, of Moody's Corporate Bond Yield Average.

The ACLI plans to publish its unofficial calculations of these rates shortly after June 30 each year. I understand that the NAIC will publish an official version in the Financial Condition Examiners Handbook.

It is quite remarkable that such highly technical changes were enacted by 39 states in only two legislative years. But even more remarkable, and a credit to our system of state regulation, is the fact that only two states deviated from the NAIC model in such a way that compliance with the model does not necessarily assure compliance with state law.

In Wyoming, which was the first state to pass these amendments, the system for automatically updating the interest rate standards was not included. Instead, the interest rates in the Wyoming law generally follow those in the NAIC's 1976 amendments. One can understand this reluctance to be the first to enact the new "dynamic" interest rate changes. New Mexico, the first state to enact the complete NAIC model did so by a margin of only one vote. That came after a two-hour debate on the Senate floor in which the consequences of being the first - and, God forbid, the only - state were discussed.

The other state which deviated from the model in such a way that compliance with the model does not necessarily assure compliance with state law is, of course, New York. Under the 1980 amendments to the NAIC Model Standard Valuation Law, there are two formulas for determining the statutory valuation interest rates. The more liberal one, for most annuities and guaranteed interest contracts, gives full weight to the reference interest rate and the other one, for life insurance and certain annuities and guaranteed interest contracts, gives only half weight to the portion of the reference interest rate in excess of nine percent.

The New York version of the NAIC Model permits the more liberal formula only if certain conditions are met. In order for a company to use the more liberal formula in New York, the New York law requires that the company submit an opinion of a qualified actuary that the reserves, and the assets held by the company in support of such reserves, make good and sufficient provision for the liabilities. The opinion must be accompanied by a memorandum describing the calculations made in support of the opinion and the assumptions used in the calculations. To my knowledge, this represents the first time that the law has specifically required an actuary to consider the asset side of the balance sheet in forming an opinion about the reserves.

In a letter, dated August 2, 1982, to companies doing business in New York, Thomas J. Kelly announced the intention of the Department staff to recommend to the Superintendent at least preliminary

guidelines relating to these requirements for inclusion in a circular letter prior to the end of this year. I understand that work is progressing on these guidelines.

It is my personal opinion that successful implementation of this law in New York would be a major step in the evolution of actuarial practice and could open the door to greater reliance on the actuary in the future.

This completes my report on the status of these amendments and important state deviations. The second part of my assignment is to cover the questions of interpretation currently being considered by the NAIC's Technical Staff Actuarial Group (TSAG).

- I. Operative Date of 1980 Amendments for Life Insurance. When these amendments were being developed by the NAIC, the discussion centered around substantive questions. There was no detailed discussion of exactly when and how these changes would become effective for life insurance. January 1, 1989 was chosen as the latest possible operative date and the traditional wording was incorporated into the Model.

Near the end of 1981, after 17 states had enacted the model, people began to ask whether a company could elect to use the new standards for one new plan at a time, or whether a company had to go on to the new standard for all of its currently issued life insurance at the same time. Since the NAIC had not expressed its intention in 1980, the question was placed on the TSAG agenda.

It has not yet been resolved, but it appears likely that a guideline will be developed interpreting the model law as permitting some form of plan-by-plan election, but with some restriction on the use of the old standards for new forms once a company elects the new standards for some of its forms.

I base this prediction on the fact that most states that have expressed an opinion have taken this middle-of-the-road position.

- II. Policies with Cash Values in Excess of Reserves. This is one of the most controversial subjects on the TSAG agenda. The question is what does the valuation law require for a life insurance policy which has cash values at one or more durations which are in excess of the minimum statutory reserve calculated for the plan without regard to those cash values.

A wide range of individual opinions have been expressed. At one end of the spectrum it has been argued that the cash values can be ignored in the reserve calculation and any excess of cash values over reserves set up as a liability as such excess arises. At the other extreme, it has been suggested that an

additional reserve be established at the issue date of the policy so that the total reserve is sufficient together with future net valuation premiums - not in excess of the corresponding gross premiums - to mature the policy for its cash value at any duration.

No consensus has yet been reached, but a professional actuarial committee that advises TSAG has held out some hope that a compromise can be reached.

- III. Valuation and Nonforfeiture Interest Rate Differentials. When the Standard Valuation and Nonforfeiture Laws were amended in 1976, the minimum standards for most life insurance policies were based on interest rates of 4-1/2 percent for the valuation of reserve liabilities and 5-1/2 percent for nonforfeiture values. Prior to this, no differential had existed between these two standard rates and companies had almost always based reserves and nonforfeiture values on the same interest rates. This new aspect of the standard laws raised questions concerning the application of these laws to policies with reserves and nonforfeiture values based on different interest rates.

Proposed guidelines have been developed. They cover the manner in which the Standard Valuation Law and the Standard Nonforfeiture Law for Life Insurance, as amended in 1980, govern the choice of the interest rate or rates used in the various situations covered by these laws. At its meeting this past Sunday, TSAG referred the guidelines to its technical advisory committee and to a committee of the American Academy of Actuaries for a professional opinion.

- IV. Minimum Cash Values for Individual Annuities. Under the Standard Nonforfeiture Law for Individual Annuities and the existing NAIC guidelines it is possible to use a constant surrender charge at all durations. However, a surrender charge that decreases by duration can result in values that are less than the minimum standards even though they are greater than values of a comparable annuity with a constant surrender charge.

Several individuals have brought this to the attention of TSAG, and at last Sunday's meeting, the Technical Staff Actuarial Group decided to study the question.

MR. WILLIAM T. TOZER: I believe everyone in this room will agree that the life insurance industry is seeing more innovative product development today than we have ever witnessed in our working lifetime. Fortunately, the 1980 amendments permit the commissioner of insurance to establish minimum cash values and paid-up non-forfeiture benefits for new plans that do not fall within the methods described in the law. A committee of actuaries, working

through the American Council of Life Insurance, is attempting to recommend minimum standards for such products. I will attempt this morning to discuss a few of these products. My comments are my own and not the recommendations of the committee.

The first product I would like to discuss is the adjustable premium life insurance policy. This is an individual policy which provides that the premium charged may be changed by the company but never be higher than the maximum premium stated in the policy.

For this policy, I believe the company should certify four conditions to the insurance department. First, the current rate schedule is lower than the company would charge for a policy with a guaranteed rate schedule. Second, the company will maintain a description of the projected assumptions underlying the current premium schedule and all subsequent revised premium scales. Third, the company will review the assumptions underlying the current premium scale at least every five years and change the current premium scale for in force policies if the review shows that a premium change should be made. This would obligate companies to reduce premiums as well as increase them on in force policies. Fourth, the company, upon the insurance department's request, will provide an actuarial opinion at the time of any premium change.

I believe an actuarial opinion should cover at least the following five items. First, the new premium schedule is computed in accordance with commonly accepted actuarial standards and principles. Second, the premium schedule is based on projected assumptions and does not distribute surplus or recover past losses. Third, the premium schedule does not unfairly discriminate among policyholders. Fourth, the premium schedule has been calculated in accordance with contractual provisions of the policy. Fifth, the premium schedule does not group insureds into risk classes based on changes in the individual's health, avocation, or occupation since issue.

I recommend that the minimum cash values for these policies be based on the guaranteed maximum premium schedule. Of course, the company can guarantee cash values higher than these minimums. In addition, I would require that the current premiums illustrated at the time of issue or at any time in the future should not generate minimum cash values higher than those guaranteed in the policy. In other words, I believe that the guaranteed premium schedule should be used to determine whether or not the cash values meet minimum standards. I further believe that the cash values in the policy should control the slope of the current premium schedule.

I recommend that minimum reserves be based on the current premium schedule at the time of issue. Basically, reserves are influenced by the slope of the premium schedule. Consequently, if the slope of the current premiums and the maximum premiums is the same, the same minimum reserves will be developed using either premium schedule.

In addition, when the guaranteed maximum premium schedule exceeds the valuation net premium schedule, no additional reserves are needed.

In other words, I believe that all tests for deficiencies should be made against the guaranteed maximum premium schedule and not the illustrated premium schedule. I make this recommendation because the company can remove this deficiency at any time by raising its premium schedule to the guaranteed maximum schedule. I must emphasize at this point that any limitations in the policy which prohibit the company from raising its rates to the full maximum premium schedule reduce the maximum premium schedule for deficiency test purposes. For example, if the company is limited to rate increases not exceeding 10% per year and their current premium schedule is 25% below maximum, the tests should be made against a 10% increase, not the full guaranteed maximum premium.

A second type of product I would like to discuss is the index linked product. There are two risks to be considered in the valuation of this contract.

The first is a measurable future guaranteed benefit risk. This risk can be valued by using the guarantees in the policy and the methodology and rates prescribed by the Standard Valuation Law.

The second type of risk is the indeterminate future risk. I would like to describe four indeterminate future risks and how these risks can be reduced or neutralized.

First, there may be a re-investment risk. This is the risk that the company will not be able to obtain yields in the future comparable to those guaranteed by the external index. The best way to neutralize this risk is for the company to purchase investments whose yields should closely follow the index.

Second, there may be a risk of capital loss on negative cash flow. Traditional, fixed cost contracts have this risk as well as index linked contracts. In fact, the risk is only greater for index contracts if they are marketed to people who are more investment conscious and likely to select against the company. There are at least four ways of handling this risk. First, product design can help to substantially reduce this risk. For example, surrender charges and front-end loads can deter investment anti-selection. Second, the risk of capital loss is lessened when the index and the associated investments have very frequent change periods. As a result, the index and investments would seldom be out-of-line with other investment opportunities. Third, taxation can discourage investment anti-selection. For example, any deferred income could become taxable or a surtax could become payable. Fourth, the six month deferral clause can reduce investment losses. Of course, a company would be very reluctant to use this method except in extreme circumstances.

Third, there may be insufficient quantities of investments available to match the index. This risk can be controlled by careful selection of the index. For example, an index based on Spencer, Iowa library bonds would be a poor index.

Fourth, the index related interest rate may fall below the minimum guaranteed interest rate. This problem would occur today on a policy that used an index based on the Treasury 13-week Bill discount rate with a minimum guaranteed rate of 10%. The best way to reduce this risk is to set a reasonably low minimum guaranteed rate, such as 4%.

I recommend that a company never issue a product with an indeterminate future risk that cannot be reasonably neutralized. If the indeterminate future risks can be reasonably neutralized, I recommend the company do three things.

First, at the time a contract is filed with the insurance department, the company should include a description of its plans for minimizing the indeterminate future risks. Second, the company should furnish a statement by a qualified actuary that additional reserves are not necessary because the company's planned program will adequately minimize the indeterminate future risks. Third, the company should furnish with its annual statement an actuarial statement that the actuary has examined the nature of the assets currently held by the company, has considered those assets expected to be acquired in the future, and that in his opinion the reserves established for the contract make good and sufficient provisions for these risks.

A third type of product I would like to discuss this morning is the adjustable cash value product. This is a life insurance policy which separately identifies interest credits and mortality charges made to the policy. An adjustable cash value product may also provide for other credits or charges such as expense charges.

There are two types of adjustable cash value policies. The first type permits the policyholder to pay any size premium at any time. This type of policy is usually referred to as a universal life type policy. The second type of policy requires the policyholder to pay a stipulated premium at stipulated times or the policy lapses. At stated intervals, the company may change the stipulated premium and at that time, the insured may have several options. For simplicity, I call this policy a scheduled premium policy.

Reserves for an adjustable cash value product requires special consideration. Reserves are established to ensure the policyholder that the company will be able to meet its future obligations. As a result, any valuation method must take into consideration all future commitments. As a result, I believe that any reserve method must be a prospective method. Likewise, I believe a prospective method is a more acceptable method for tax purposes.

For a net level reserve, I would recommend the difference of the present value of all future guaranteed benefits and the present value of future valuation premiums adjusted by a ratio. This ratio is the ratio of the account value to the guaranteed maturity fund when the account value is less than the guaranteed maturity fund. Otherwise, the ratio is one. The guaranteed maturity fund is the amount that will mature the policy based upon policy guarantees at issue less future guaranteed maturity premiums. The guaranteed maturity premiums are annual level gross premiums which will mature the policy on the maturity date based upon the policy guarantees at issue. A universal life type policy permits the policyholder to pay a premium less than the guaranteed maturity premium or even pay no premium at all. Any unusual premium paying pattern will affect the account value. Consequently, the ratio adjusts the reserve for any such unusual pattern.

The Commissioner's Reserve Valuation Method would be the Net Level Premium Reserve less the unamortized first year allowance. The first year allowance is the first year allowance in the Standard Valuation Law for a plan of insurance defined at issue by the guarantees in the policy and the guaranteed maturity premiums. An adjustable cash value policy should not be required to show any cash surrender or nonforfeiture benefits in the policy. Instead, the policyholder should be given an annual statement each year. This annual statement should include six topics. First, the account value at the end of the previous and current year. Second, the totals by type of credits and charges to the account during the year. Third, the current death benefit at the end of the current year for each life covered by the policy. Fourth, the net cash surrender value at the end of the current year. Fifth, any outstanding loan balance. Sixth, a warning should be given if the policy will lapse during the next year if no premiums are paid based on the guaranteed interest and cost of insurance rates. The company should make a report available illustrating future results on a guaranteed basis. The company should be permitted to charge a reasonable fee for this report.

Paid-up nonforfeiture benefits should not be required in the policy; however, if paid-up benefits are provided, their present value should not be less than the cash surrender value. The present value should be based upon the mortality and interest standards equal to or better than the guarantees in the policy. On an adjustable cash value policy, if the present values are not based on the policy guarantees, there is the possibility that a policyholder taking a paid-up option will receive preferential treatment over a policyholder electing to pay the premium. By using the policy guarantees, any preferential treatment will be in favor of the premium paying policyholder. The minimum cash values for an adjustable cash value policy of the universal type, I believe, should be calculated on a retrospective basis. The gross premiums less benefit charges and actual expense charges should be

accumulated to the calculation date. The minimum cash value would be this accumulation less any unamortized unused initial expense allowance. The accumulation should be at interest rates actually credited on an unconditional basis. The initial expense allowance is the initial expense allowance permitted by the Standard Nonforfeiture Law for a level premium, level death benefit endowment policy. Premiums would be payable for the maximum premium paying period. The death benefit would be the initial face amount at issue. The unused portion would be the excess allowance over the actual first year expenses. This unused portion would be amortized over the maximum premium paying period using annuity due factors based on the guarantees in the policy.

The minimum cash values for any other adjustable cash value policy should be calculated on a prospective basis. This method would be the same as the reserve method on a commissioner's Reserve Valuation Method with two exceptions. First, the initial expense allowance should be one percent of the face amount at issue plus 125% of the valuation premium. Second, the current guarantees in excess of the initial guarantees in the policy would be funded over the period of the guarantees.

MR. GODFREY PERROTT: As John told you, I am the Chairman of the Committee on Specifications for Monetary Values - 1980 CSO Tables. The Committee was formed in late 1981 in response to a request from the NAIC C-4 Technical Task Force to prepare detailed calculation specifications for the 1980 CSO tables. The Committee met in conjunction with the Atlanta meeting and the Houston meeting, and will be meeting Wednesday afternoon to try to wrap up its work. Since the Committee has not yet met, everything that I will say is tentative and might be changed by our meeting tomorrow. I do not anticipate any significant changes.

Following our meeting tomorrow, I expect us to prepare a draft report which we will submit to the Society. As soon as possible, the Society will give a copy of the report to the ACLI so it may be presented to the membership as an exposure draft.

I will describe briefly the decisions we have made, and then expand the reasons for those decisions. The major points of our report will be as follows:

1. We started from the 1958 CSO specifications rather than starting from scratch.
2. There are areas of technical concern not covered in the law about which the members of the Committee have strong opinions, but which have been left out of the specifications. These include:
 - a. reserve basis for RPU and ETI options where the cash value interest rate is higher than the allowable reserve interest rate,

- b. how the expense allowance should be calculated for plans with non-level benefits (the model law is surprisingly ambiguous), and
 - c. whether or not the CRVM reserve may be less than the expected present value of benefits for the balance of the policy year.
3. The optional select factors should be applied to the age nearest birthday q 's as originally published with no grading.
 4. Age last birthday l_x 's should be determined by interpolating age nearest birthday l_x 's (for the same duration for select factors) rather than by calculating age last birthday l_x 's from q_x 's.
 5. l_x 's, C_x 's and D_x 's, whether select or ultimate, should be calculated starting from age 99 and working backwards.
 6. Even though the 1980 CSO table is not a Makehamized table, a workable table of uniform seniority can be developed and is in the report.
 7. The NAIC requested us to propose standard formats in which they may receive policy filings. We feel that this is better handled by the NAIC directly.

I would like to explain briefly why the Committee took the positions it has. We received comments from members of the Society including recommendations that the specifications be defined in terms of floating-point arithmetic, that no specifications be published, and that specifications be written in terms of basic probability functions rather than commutation columns.

We decided to start from the 1958 CSO specifications on the assumption that any company or consultant concerned about the specifications would already have computer programs using those specifications. We felt the Society should publish specifications, and (particularly in the area of extended term insurance) it was preferable that calculations not be ambiguous. We were unwilling to define how to use floating-point arithmetic since the problems of implementing this definition on binary computers are significant. For example, .1 cannot be expressed as a finite binary decimal.

The major areas we changed in the 1958 specifications were:

1. to more closely reflect the wording of the law by expressing numerators and denominators as present values, rather than as present values multiplied by D_x and
2. in the method we recommend to calculate l_x 's.

We selected the approach of starting from age 99 and working backwards, and of interpolating age nearest birthday l's to get age last birthday l's, to achieve the following objectives:

1. Paid-up values will always be the same under this approach. Using select factors and starting from a radix of 0 would not give this result.
2. Paid-up values would be the same between select and non-select plans once the selection period has ceased. This seems desirable.
3. Age last birthday l's have traditionally been calculated from age nearest birthday l's even though the 1980 CSO specifications were adjusted to give the appearance that they were calculated from q's. We felt it was better to be explicit.
4. The methodology we have proposed can easily be extended to substandard reserves based on multiples of the standard table or joint life reserves.
5. The method we have proposed avoids the problem of values vanishing at age 99 on very high interest rates. (It might pose the alternative problem of values becoming extremely large at young ages, but we felt this was preferable.)
6. We recommend that the select factors be applied to age nearest birthday q's as published, because they have been published and have already been used. Recommending anything else would lead to confusion. If the NAIC decides at some subsequent date that they would prefer to use graded select factors, they may publish those as a new table without requiring any change in legislation (except possibly in Wyoming).
7. We propose a method of uniform seniority even though the table is not Makehamized. We developed separate tables of uniform seniority for each of the four gender combinations (male/male, male/oldest female, female/oldest male, and female/female). These tables were derived by equating net premiums and lead to reserves that should be usable. We feel that companies selling joint products need to be able to determine premiums based on uniform seniority as a minimum or else the rate book becomes totally unwieldy. We should not have to force companies selling joint products to give each of their agents a micro-computer.
8. Finally, we felt that it was not the Society's function to propose standard formats and turned this back to the NAIC.

I would be happy to discuss any aspect of our report further if anyone has any questions.

Mr. Paul Sarnoff: First I am not sure I understood completely the annual statement which Bill Tozer suggests should be provided to the policyholder each year. It seems to me that, at a minimum, he should be furnished with the guaranteed benefits under his policy assuming that nothing more favorable than the minimum guarantees prevails. In other words, if the policy remains in force, how long is it going to continue? Here, one can make an assumption as to continuation of premium payments, or you can assume no further premium payments. I guess the assumption would depend upon the nature of the underlying contract. This statement would give some indication of what the guarantee benefits under the policy are.

My other question relates to indeterminate premiums. Bill indicated that actuaries should provide a certification that no prior experience would influence in any way the determination of premiums for the future. I know of no actuarial principle or theory that says that you should not take past experience into account in setting future premiums under a policy like this. In fact, a company that sells both life and health insurance is placed in a dilemma of doing just the opposite of this for health insurance. I just attended a Sunday NAIC session in which there was described a rate regulation which requires for health insurance that you provide a minimum standard of loss ratios. The only way you can provide a minimum return on the policy is to take into account past experience in setting a rate for the future. I wonder whether the restriction to prospective-only revisions is really a necessary part of the regulation.

Mr. Tozer: Paul, I may not have been clear in my comments on your first question. I am actually suggesting two things. The first is an annual report to the policyholder which gives some indication of where his policy stands. I also am suggesting that a future projection be made available to the policyholder, on a guaranteed basis, of what his policy would be like if he paid his minimum premium, or however he wanted to assume future premiums would be paid. I added the stipulation that on those types of future projections a company should be able to charge a reasonable fee if it so chose. Now, I think this fee should be a nominal fee, and a company may decide that they wish to provide those types of projections at no cost to help bind the policyholder to the company. However, I think any projection which is provided automatically by the company should have no fee charged for it. Only for those projections where a policyholder actually requested a special projection may a fee be charged. I think projections should be available. The question is whether or not a policyholder should have the right to ask for as many projections as he wants, as quickly as he wants, without paying some kind of nominal fee for it.

On the second point, Paul, about the revision of premiums, I believe for any kind of revision in rates you have to take a look at the

past. I do not think that an actuary can soundly project into the future without taking consideration of what has happened in the past. However, I also do not think that on this type of product, and this is a personal opinion now, that a company should have the right to recapture past losses, or raise his rate because he is trying to recover from his past losses.

Likewise, I do not think that he should be distributing past profits in the premium scale. I think that the company which wants to distribute past profits should write a par product and do so in the form of a dividend scale. I believe that this type of product should not be used as a replacement of par insurance. If there is to be distribution of surplus, I think it should be done through the dividend mechanism and not through continual adjustments of a future premium scale. I guess my feelings are based on that viewpoint that past profits should go relatively quickly to the current policyholder in the form of a cash dividend, and not be amortized over a long period of time in the form of a reduced premium scale.

Ms. Paula Holt: Do the dynamic valuation interest rates in the 1980 amendments apply to group life insurance, and, if so, isn't there a problem caused by the fact that the new interest rates for life insurance apply to policies issued on or after the operative date of the nonforfeiture law - a law that doesn't apply to group insurance?

Mr. Carroll: Yes, the dynamic valuation interest rates apply to group life insurance as well as ordinary and industrial life insurance. The new section of the model that defines the valuation interest rates speaks of "all life insurance." Throughout the model the adjectives group, ordinary and industrial are only used when a distinction is to be made. The fact that the operative date for group life insurance depends upon the operative date of the nonforfeiture law causes a minor problem in states that permit a plan-by-plan election, but nothing that can't be simply overcome. For example, a company might consider electing an operative date for group life insurance under the nonforfeiture law with a comment to the effect that, although the nonforfeiture law does not apply, the election is being made to establish an effective date for valuation purposes.

Mr. Ralph Goebel: What will happen to Actuarial Guideline No. 2 now that guaranteed interest contracts are specifically covered by the valuation law?

Mr. Carroll: Actuarial Guideline No. 2 is the NAIC's guideline that sets interest rate standards for the valuation of active life funds held relative to group annuity contracts. The guideline was amended in 1981 so that it would not apply to the extent that the valuation standards in the 1980 amendments have been enacted and are applicable.

Until the new law is enacted and applicable in a state, Actuarial Guideline No. 2 will continue to apply and valuation standard interest rates applicable to new contributions will still be needed.

In the past, the interest rates in the guideline have followed those developed by the New York Insurance Department for its Circular Letters on the same subject. Since the 1980 amendments were enacted in New York this year, the Circular Letters will no longer provide a source for the interest rate. The NAIC anticipated this, and provided an alternate way to establish the rate to be published in Actuarial Guideline No. 2.

The rate for 1982 contributions will be this year's rate for one of the product categories in the 1980 amendments. The category chosen was Plan Type B with guarantee duration of more than 5 but not more than 10 years for contracts with cash settlement options which are valued on a change in fund basis and do not guarantee interest on consideration to be received more than 12 months beyond the valuation date. For 1982 contributions this rate is 14.50%.

Mr. William Wellnitz: Under the change in fund basis as defined in the model law, can a company apply withdrawals against earlier years' contributions, or must they be netted against current year's contributions?

Mr. Carroll: Before I answer your specific question, let me stress that the law does not define a unique change in fund basis of valuation. That was never the intent. It speaks in terms of a change in fund basis, not the change in fund basis. It does say that a change in fund basis refers to a valuation basis under which the interest rate used to determine the minimum valuation standard applicable to each change in the fund is the calendar year valuation interest rate for the year in which the change takes place. Returning to your question, I would say that withdrawals probably ought to be treated as negative changes in the fund for the year in which the withdrawal takes place. If you are concerned about having to continue indefinitely with fixed portions of the fund attributed to past years, you could consider other ways to accomplish a rollover of prior years' fund balances to the current year. I think that rollover of prior years' funds could be considered as changes in the fund under the law.

Mr. Roland G. Anderson: The 1980 Amendments define two sets of minimum nonforfeiture values--one for males and one for females. As a consultant for some very small companies with very limited resources the question has arisen if this means two separate sets of values must be provided. At first the answer seems very simple--provide just one set of cash values by using the greater of the male or the female minimum cash value at every issue age and duration. But this procedure has practical problems with respect to calculating reduced paid-up amounts and periods of extended term. For example, if you provide a male cash value to a female

policyholder (since the male cash value was greater than the female cash value at that duration), then which mortality basis defines the minimum reduced paid-up amounts and periods of extended term that must be provided? Is it the male mortality basis that was used to compute the cash value or is the mortality basis determined by the sex of the policyholder (in this case female)? A careful reading of the Standard Nonforfeiture Law appears to support the latter view.

So providing one set of cash values to males and females does not eliminate the need for providing separate male and female paid-up nonforfeiture values. A possible way to get around this problem would be to calculate all of the paid-up nonforfeiture values using the mortality basis that always produces the largest values. That would be the female mortality table since everywhere it has the lowest mortality rates. Granted, you would be giving the male policyholders a better deal than they would get using male mortality but at least you would be meeting the minimum requirements. However, sample calculations on a whole life plan revealed that dividing male 1980 CSO cash values by net single premiums based on female 1980 CSO mortality produced reduced paid-up amounts that exceeded the face amount near policy year 30 at the younger issue ages. So this method is essentially impractical.

Thus, considering these comments, was it really the intent of the amendments to require that two separate sets of nonforfeiture values be provided, and if not, is there a practical procedure to obtain one set of values for both male and female policyholders? If there is no practical procedure, would there be a possibility for future statutory amendments to permit the determination of one set of values.

Mr. Carroll: The 1980 CSO table which was developed by a Committee of the Society of Actuaries is a sex-distinct table. In its report, the Society Committee explains why it recommended separate tables for men and women. The Committee found that a single age setback could not approximate the male-female mortality differential across the entire range of ages.

The NAIC's Technical Actuarial Staff reviewed that recommendation, and, after exposing it to industry and professional groups, recommended the sex-distinct tables to the state insurance commissioners for inclusion in the NAIC's model law. Perhaps Mr. Montgomery would wish to comment further on this question.

Mr. Montgomery: I think as many of you know, California has a specific statute that requires distinct premiums and policies by sex. We are intending to modify our bulletin to agree with the statement of principle adopted by the NAIC last December, which said that the sex is a valid source for distinction and distribution by sex is a valid distinction for risk classification. This would tend to suggest use of a unisex mortality table constructed according to

some assumed distribution by sex. From this unisex table reserves and cash surrender and other nonforfeiture values could be calculated. I would appreciate any other comments I might receive.

Mr. Roland G. Anderson: I have a question regarding deficiency reserves, or as they are now called, minimum reserves. Is it possible to calculate the basic policy reserves using aggregate mortality, but when comparing the gross premiums to the net premiums are you permitted to calculate the net premium using select mortality? It appears that a strict reading of the law would allow it. It does allow the use of a different interest rate in calculating the net premium, so it seems that it would allow the use of a different mortality table. Using select mortality would produce the lowest possible net premiums, thereby reducing the chance that deficiency reserves would be required.

Mr. Carroll: Yes, but with great care. Let me explain. Suppose the 1980 CSO table without select factors is the basis used by the company to calculate the basic reserves for a policy. When the company performs the test required by section 7, the law provides that the test be made using the same method as the company had used in calculating its reserves, but it permits the minimum valuation standard of interest and mortality to be substituted for the interest rate and mortality table actually used. This forces us to ask what the minimum valuation standard for mortality is. The law permits a company to choose on a plan-by-plan basis between the 1980 CSO table with or without 10-year select factors. The company could elect the 1980 CSO table with 10-year select factors as the standard for the plan. This would permit the use of the select factors in making the comparison with the gross premium required by the minimum reserve test, but it would also mean that the basic plan reserves which the company had calculated on the 1980 CSO table without select factors would have to exceed the minimum standard calculated on the table with the select factors.

Mr. Montgomery: The only thing that you have to be careful about, when going this route, is you have to remember that in using a select table you have a steeper mortality slope. By using the select tables, you could end up with higher reserves than you would otherwise. I think you should seriously consider that.

Mr. Thomas Mitchell: I have a very basic question on annuities. For an annuity contract that guarantees interest at 10% for n years and 3% thereafter, what is the guarantee duration for the purpose for determining the standard valuation interest rate?

Mr. Carroll: For the typical annuity which provides cash settlement options, the guarantee duration is the number of years for which the contract guarantees interest in excess of the statutory valuation interest rate for life insurance policies with guarantee durations in excess of 20 years. Currently, the 10% rate exceeds the "long-term" life insurance rate so that the guarantee duration for the annuity in question would be 10%.

Mr. Robert Callahan: I'd like to address something that Bill Carroll mentioned. Bill mentioned that it is expected that most states will go along with a plan by plan implementation of the 1980 Amendments. He mentioned that there were a few states that indicated that they would require an all-at-once implementation. The valuation laws affect all licensed companies of a given state, and although there may be a relatively minor number of life insurance companies that are licensed in New York State, the volume of the business of those companies licensed in New York represents the vast majority of the business in the United States. New York has decided that it would require an all-at-once implementation of the 1980 CSO table for cash valued policies. New York specifically permits the adoption of the 1980 table for non cash valued term insurance at the option of the company. Administratively, we have decided that we would permit the dynamic interest rate to go along with the adoption of the 1980 table for non cash valued term insurance.

Now there is one administrative problem that results from New York's adoption, or interpretation, of an all-at-once adoption of the 1980 table. That is, if one of our licensed companies decides to go on a plan by plan adoption in those states that permit a plan by plan adoption, and does not elect an adoption date under section 208a of our law for cash valued policies, then under our law that state has to value those policies under the 1958 table at an interest rate no higher than 4½%. I would suggest that those companies licensed in New York, if they want to adopt the plan by plan implementation, that they so advise our state. If there is enough of a support for plan by plan implementation, that such could be considered in the next legislative session.

Mr. Shane Chalke: I have two questions for Bill Tozer. My first question deals with the requirement that the current premium scale in an indeterminate premium plan be less than the guaranteed scale on a comparable guaranteed premium plan. I question the rationale behind such a requirement. It seems to me that whether the current premium scale is less than, equal to, or even greater than a comparable guaranteed plan depends on the policyholder's expectations of the future in contrast with that of the insurance company. As an example, we could think of a variable rate mortgage. If I expected interest rates to fall in the future, I would certainly be willing to pay a higher initial interest rate for a variable rate mortgage than I would for a fixed rate mortgage. In contrast to that, if I felt that interest rates were going to increase in the future, I would only be willing to pay a smaller initial interest rate for a variable rate mortgage versus a fixed. I wonder what the economic rationale is behind such a requirement.

My second question deals with the requirement that there be an actuarial relationship between the current premium scale and guaranteed cash values. This is a radically new concept only being

applied to indeterminate premium policies. They are being singled out for such treatment. If you consider a traditional par whole life, you'll notice that it has a level guaranteed scale and a rapidly decreasing current scale. However, no one is arguing that there must some relationship between cash values and the current net premium scale. Traditional policies often have negative net premiums after duration 30 or so that certainly are not factored into the cash value nor should they be. Cash values should reflect the contractual benefits given up by the policyholder in relation to his contractual obligations.

Mr. Tozer: Shane, your first question concerns my comment that the current premium scale on indeterminate premium products should be not greater than the premium scale for a product which has guaranteed premium scale. The reason I made that remark was that I think the policyholder is accepting an additional risk in an indeterminate premium product that he's not accepting with a fixed premium guaranteed product. As a result I do not think he should be charged more when he's taking a product that provides fewer guarantees. That is the rationale behind that statement.

In reference to your second question. I am not sure I fully understood it, but the reason I took the position I did about the current premium scale in relationship to cash values is that I don't think that an actuary should be able to artificially lower cash values by adjusting the slopes of either the current or guaranteed premiums. So I basically am saying that whatever a person does with the slope of his current projected premium scale is fine, as long as he would not generate by that a schedule of cash values that would be higher than what he's going to pay under the contract. I don't think that, for example, a person should have a guaranteed premium scale with a very steep slope (which would generate little or no cash values based upon that schedule), and then turn around and illustrate that the policyholder is buying a policy which has a decreasing premium schedule (if cash values are calculated on a decreasing premium schedule he would be required to provide cash values considerably higher than what is being provided in the policy).

I guess my comment really is that if we were to take up a principle like that, it should be applied evenly across all plans. Any principle that we want to adopt should be applied equitably across all plans.

Mr. Alan Lauer: I'd just like to make one comment on something that Bill Carroll referred to at the very beginning. That's the dynamic interest rate structure included in the 1980 Amendments. I feel that the announcement of the dynamic interest structure increases the responsibility of actuaries who sign valuations for the annual statement. I think that, in most cases, reserves calculated according to the minimum standards in the valuation law will be adequate. But, I am not sure in my mind that there is any longer

the guarantee, or the very high degree of certainty that there used to be, that a reserve that meets legal requirements is actuarially adequate. My point in standing up here is simply to try to impress upon actuaries who sign the valuation statements that they have a responsibility to look beyond the legal requirements, and to consider whether the reserves that they are certifying are indeed adequate for the purpose.

Mr. Louis Weinstein: I've been working for insurance companies and consulting firms for 26 years, and during that time no investment officer has ever asked me what I thought about a particular asset which he planned to buy or a particular asset which he planned to sell. Sometimes there were tax questions, but in terms of investment soundness, nobody sought my opinion. However, I am frequently asked to sign all the types of certificates which the states conjure up in order for a company to continue to be licensed. I am a little bit concerned of the implications when I sign the next actuarial statement about the assets being adequate. How do I know that next year the investment officer will not invest substantial money in the Penn Square of 1985, whatever company that might be, or a Chrysler of 1986, or a company which manufactures extra-strength Tylenol in 1988? These factors are not part of my current expertise. Even if they were, that expertise is never tapped; certainly not by my clients or my prior employers. It seems to me that these regulations are looking for some scapegoat to bear the burden of future investment calamities, and I think that's rather unfair to shove down the throat of the actuary.

Mr. Callahan: In New York we have this requirement for the certification of assets and liabilities, and we are working with an industry advisory group. At the last session, the industry advisory group notified us that our requirement does not require that the investment officer get the prior approval of the actuary before the investment officer makes his investments. But the actuary, in looking at the valuation, looks at the assets that the investment officer has acquired, and then makes a determination whether or not those assets are properly matched with the liabilities. It's a kind of an after-the-fact determination.

I'd also like to comment on something that Paul Sarnoff mentioned before. We in New York considered the adjustable premium nonparticipating policy for almost two years before we finally approved it. The biggest question, perhaps, was whether or not the adjusted premium resulted in a participating policy. Some of us were aware of the adjustable premium, guaranteed renewable, nonparticipating accident and health policy. Some of us tried to use that as a precedent. We also realized that, in an increasing loss ratio accident and health policy form, when the insurance company comes in to many states for a rate increase, the increase is handled in such a way that results in the profits in early years being returned to some form of policyholders; whether it be new policyholders, or the existing policyholders. Now, in the life

insurance area we try to make a distinction between a participating policy and a nonparticipating policy. The compromise was reached that for life insurance we could consider the adjustable premium as being nonparticipating if the experience factors taken into account were prospective ... even though those prospective factors may have been based upon past experience, if the policy did not distribute past gains, and if it in turn did not try to recoup past losses.

