

A PUBLIC POLICY PRACTICE NOTE

Actuarial Standard of Practice No. 24

Compliance with the NAIC Life Insurance Illustrations Model Regulation

2009 Update

American Academy of Actuaries
Life Products Committee Illustrations Work Group



AMERICAN ACADEMY *of* ACTUARIES

PRACTICE NOTE

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Introduction

The American Academy of Actuaries is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

This practice note was prepared by the Illustrations Work Group (IWG), a work group organized by the Life Products Committee of the American Academy of Actuaries. The IWG was charged with updating this practice note to better reflect current practices and to reflect the 2007 revision to ASOP No. 24.

This practice note is not a promulgation of the Actuarial Standards Board, is not an actuarial standard of practice, is not binding upon any actuary and is not a definitive statement as to what constitutes generally accepted practice in the area under discussion. Events occurring subsequent to this publication of the practice note may make the practices described in this practice note irrelevant or obsolete.

This practice note represents a description of practices believed by the IWG to be commonly employed by actuaries in the United States in the year 2008. The purpose of the practice note is to assist actuaries in performing professional services in compliance with ASOP No. 24. No representation of completeness is made; other approaches may also be in common use.

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Definitions

- 1) ASOP: Actuarial Standard of Practice No. 24, Compliance with the NAIC Life Insurance Illustrations Model Regulation (unless specific reference is made to another particular actuarial standard of practice).

- 2) Model: NAIC Life Insurance Illustrations Model Regulation.

- 3) DCS: A disciplined current scale, which is defined in the Model to mean a scale of nonguaranteed elements constituting a limit on illustrations currently being illustrated by an insurer that is reasonably based on actual recent historical experience, as certified annually by an illustration actuary designated by the insurer.

- 4) GRET: Model, Section 1. K (1) c: A generally recognized expense table based on fully allocated expenses representing a significant portion of insurance companies and approved for use by the NAIC or by the commissioner.

A) ***EXPERIENCE ASSUMPTIONS***

1) Q. What are the time frames contemplated by the terminology “actual recent historical experience” in Section 2.3 of the ASOP in determining appropriate experience assumptions for testing the DCS?

Pertinent Sections of the ASOP:

Section 2.3 Disciplined Current Scale – A scale of nonguaranteed elements, certified annually by the illustration actuary, constituting a limit on illustrations currently being illustrated by an insurer that is reasonably based on actual recent historical experience and that satisfies the requirements set forth in the *Model*.

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale – The actuary should use experience as analyzed within the insurer’s nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale....

A. The actuary can usually use judgment to determine a reasonable time frame from which data will be analyzed for assumption setting purposes. The ASOP does not specifically define the time period that would qualify as “recent.” Many actuaries choose the time frame length to correspond to the economic or business cycle length if the experience data is sensitive to the cycle. The ASOP requires the experience data to be determinable and credible. Lengthening of the time frame may be appropriate if it is required for credibility purposes.

Once the suitable time frame has been chosen and the data collected, it is common actuarial practice to review the data for possible adjustments to remove suspected or known one-time fluctuations. And, as provided in the ASOP, if real changes have occurred in the company’s operations, but not enough time has elapsed for them to be reflected in the insurer’s actual experience, the actuaries may nevertheless reflect these changes in the assumptions underlying the DCS. However, the *Model* and the ASOP do not allow for projected improvements in experience beyond the effective date of the scale underlying the illustrations.

The following represents the range of time frames for specific assumption data that most actuaries use:

Investment Returns: The most recent month to most recent year. Most actuaries would take into account investment allocation procedures (e.g., portfolio vs. new money rate) in setting this time frame.

Investment returns based on indexing may be sensitive to business or economic cycles. As per Section 3.4.1a, the actuary should consider an appropriate time frame commensurate with such cycles. For investment returns indexed to the equity markets, many actuaries believe a time frame of 20-25 years adequately reflects such cycles.

Expenses: The most recent year is generally the best indicator of current expense levels; however, some actuaries validate unit expense models using the most recent 3-5 years.

Persistency: Many actuaries would choose a period long enough to smooth fluctuations resulting from changes in economic conditions. A three year period will ensure that two policy durations will be recorded for persisting policies when performing a calendar year study.

Sales Statistics: Many actuaries would take account of the volatility of sales data. If sales are relatively steady some actuaries would use three years of annualized production figures for overall levels. Allocation by plan requires more recent data.

Mortality: Three to six years is generally considered appropriate for mortality studies conducted by the Society of Actuaries (e.g., 1975-80 Industry Mortality Study). If longer periods are required for credibility at the aggregate plan level, consideration may be given to the use of industry data, properly modified.

Taxes: Taxes are rarely free of fluctuations. Therefore, many actuaries use expected experience and marginal tax rates based on most recent information.

2) Q. Can experience factors be adjusted to exclude the effects of extraordinary events?

Pertinent Sections of ASOP:

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale – The actuary should use experience as analyzed within the insurer’s nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. ...

Section 3.4.1 (e) (1) ...Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

Section 3.4.2 Relationship of Recent Historical Experience to Disciplined Current Scale — The actuary should select assumptions underlying an insurer's disciplined current scale that logically and reasonably relate to actual experience as reflected within the insurer’s nonguaranteed element framework. The actuary should reflect changes in experience promptly once changes have been determined to be significant and ongoing....

A. An extraordinary event may be defined as one that has not occurred regularly in the past and is not expected to occur regularly in the future. Some actuaries exclude the immediate effects of these types of events when determining experience factors for the DCS. Other actuaries might spread the impact over a period of time, to allow for the possibility that unexpected events occur from time to time. If the event does change experience in a way that is significant and continuing, the ASOP requires those changes to be reflected.

For example, if the home office of an insurer is destroyed by fire, the immediate expenses of rebuilding it could be excluded in determining the DCS. If the new building costs more to operate, that increase in costs would normally be included in the DCS when the change is determined to be significant and continuing. Similarly, it may be appropriate to exclude the immediate effects on lapses of an episode of unfavorable or favorable publicity. However, if the publicity changes underlying lapse experience in a way that is significant and continuing, the changes would normally be reflected.

3) Q. Should the illustration actuary consider the assumptions specifically identified in the Model and the ASOP (i.e., interest, mortality, taxes, direct sales costs, other expenses and persistency) more important than assumptions not identified (e.g., premium mode, withdrawal rates, reinsurance, choice of dividend option, etc.)?

Pertinent Sections of ASOP:

Section 3.5 ...Each illustration reflects underwriting classification, as well as certain factors that are subject to policyholder choice. ...Policyholder choices reflected in the preparation of an illustration include, but are not limited to, the size of policy, premium payment pattern, dividend option, coverage riders, and policy loans.

In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right.

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale - The actuary should use experience as analyzed within the insurer's nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference....

Section 3.8(e) Reinsurance Agreements – New or revised reinsurance agreements may impact experience assumptions such as mortality, investment income, and tax.

A. Section 3.4.1 of the ASOP discusses what the actuary should consider when setting major experience factors such as investment return, mortality, persistency, etc. However, some of the other assumptions listed in this question (premium mode, withdrawal rates, choice of dividend option) are categorized separately as “policyholder choice factors” and are addressed in Section 3.5 of the ASOP.

For most products, the major experience factors discussed in Section 3.4.1 probably constitute the factors most likely to have a significant effect on the self-support and lapse-support tests. Most actuaries would focus more time and attention, and strive for greater credibility, on these factors.

However, for other products, other experience factors, such as policyholder choice factors, may also have a significant effect. The ASOP indicates that the actuary may test these assumptions in the aggregate while recognizing where shifts in these assumptions may cause a policy form not to meet the tests. Many actuaries test the sensitivity of possible variations in these other assumptions to determine which, if any, need further attention.

Reinsurance may have a significant positive or negative effect in satisfying the self-support and lapse-support tests. Some actuaries would reflect reinsurance by making appropriate adjustments to the experience factors affected by the reinsurance, provided that any effect tending to make the DCS more favorable is guaranteed or reasonably expected to continue. Many actuaries believe that reinsurance effects that would make the DCS less favorable should normally be reflected.

4) Q. How does the actuary usually determine assumptions that are developed without the benefit of any prior experience (company, industry, or other)?

Pertinent Section of ASOP:

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale - The actuary should use experience as analyzed within the insurer's nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference. As required by the *Model*, the experience factors underlying the disciplined current scale may not include any projected trends of improvement nor any assumed improvements in experience beyond the effective date of the illustrated scale, except as provided in 3.8....

A: There will usually be one or more available sources of information that has at least some relevance to the assumption in question. If the available experience relates to a situation that is distinctly different from the policy being tested, significant adjustments may be required, based on the actuary's judgment. As required by the ASOP, Section 3.10, the source of the data and the rationale for the adjustments should be documented.

In the event that no source of data can be identified that provides pertinent experience for a particular assumption, many actuaries would typically make a reasonable estimate of anticipated experience for that element. The considerations that led to that assumption

would also generally be documented. For example, these considerations could include an analysis of the theoretical maximum and minimum values of the factor, and a rationale for the value that was chosen. Many actuaries would analyze the impact of using other values for the assumption in question and document the results.

B) INVESTMENT RETURN FACTORS

1) Q. What investment return assumption should the actuary use in setting the DCS if new money rates are less than the current portfolio rate, and the portfolio rate is expected to decline?

Pertinent Section of ASOP:

Section 3.4.1 (a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block. For an indexed life insurance product, where the investment assumption is sensitive to business or economic cycles, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience....

A. As the ASOP states, the investment return factor underlying the DCS, whether it is a new money rate or a portfolio rate should be based on recent actual investment experience. The ASOP formerly stated that the factor was to be level and fixed for all durations; however, that strict requirement was removed from the ASOP in 2007. Nevertheless, many actuaries still find it reasonable to assume a level and fixed rate assumption, especially when there is no change in investment practice. If an actuary anticipates that the earned rates underlying the assets will decline in the future, some actuaries would use a declining investment return assumption factor. For additional guidance on setting investment return factors for Equity Indexed products refer to the Equity Indexed section of these Practice Notes.

2) Q. Section 3.4.1.(a) of the ASOP states that the investment return factor underlying the DCS should be based on the insurer's recent historical experience on assets supporting the block. It also states that the investment return factors should be developed using the same method that is used to actually allocate investment income to policies. What should the investment return factor be for an illustration of an existing policy form subject to the Model, where the new money interest rate may differ from the interest rate being earned on the assets supporting the block?

Pertinent Section of ASOP:

Section 3.4.1(a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block. For an indexed life insurance product, where the investment assumption is sensitive to business or economic cycles, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience.

The actuary should have a reasonable basis for allocating investment income to policies, whether using the portfolio, segmentation, investment generation, or any other method. The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies. The investment return factors may be net of investment expenses or, alternatively, investment expenses may be treated separately as expenses.

The actuary should use procedures that have a reasonable theoretical basis for determining the investment return factors. In determining the investment return factors, the actuary should reflect the insurer's actual practice for nonguaranteed elements with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.

A. For a company using a portfolio method to allocate investment income among policy forms, the actuary should calculate the investment return factor based on the portfolio rate of the assets underlying the book of business. Many actuaries would assume a level and fixed interest rate assumption, for both in force and new business, especially when there is no change in investment practice. If an actuary anticipates that the earned rates underlying the assets will decline in the future, he/she may use a declining investment return assumption factor.

For companies using a new money rate method to allocate investment income for an existing policy form subject to the Model, the ASOP states that the same method be used to develop the investment return factors. Further, the actuary should reflect the insurer's practice for nonguaranteed elements. Thus, the method used may vary depending on company practices. Some actuaries would develop investment return factors based on both the new money interest rate and the interest rate for assets already accumulated for the policy. For example, one method might be to assume a level new money earned interest rate factor in all future years based on current or recent new money rates together with a level earned interest rate factor for assets already accumulated for the policy. This may produce a total interest rate factor which is not level in all future policy years. Alternatively, some actuaries would use the new money rate for new issues of a policy form, but use the earned rate on assets already accumulated for in force policies. Note, however, that the illustrated scale cannot be more favorable to the policyholder at any duration than the currently payable scale.

Special cases for hybrid investment philosophies may exist, and the actuary should adopt a method that reflects actual company experience and practice. Many actuaries test such methods to be sure the investment return factor for existing policies is never greater than what can reasonably be produced by the company investment income allocation method, under the assumption that the new money rates remain unchanged in the future.

3) Q. In determining the investment return factors underlying the DCS, the ASOP refers to “assets supporting the block.” How are the assets supporting the policy block determined, and how are the investment return factors determined?

Pertinent Section of ASOP:

Section 3.4.1(a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block. For an indexed life insurance product, where the investment assumption is sensitive to business or economic cycles, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience.

The actuary should have a reasonable basis for allocating investment income to policies, whether using the portfolio, segmentation, investment generation, or any other method. The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies. The investment return factors may be net of investment expenses or, alternatively, investment expenses may be treated separately as expenses.

The actuary should use procedures that have a reasonable theoretical basis for determining the investment return factors. In determining the investment return factors, the actuary should reflect the insurer’s actual practice for nonguaranteed elements with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.

A. As stated in the ASOP, the actuary should develop the investment return factors by considering the assets supporting the block and by using the same method that is used in actual practice to allocate investment income. Consequently, the definition of assets supporting the block may vary among companies or even among blocks within a single company. If assets are segmented, most actuaries would use such segmentations to determine the asset block. In this case the investment income attributable to the block is usually taken to be the actual investment earnings of the assets in the segment. If the assets allocated to the block are part of a larger portfolio, a pro rata share of the total portfolio may generally be used. In this case, the investment income may also be based on a pro-rata share (the portfolio method). Alternatively, the company may use a different method of assignment (e.g., the investment generation approach). Many actuaries would require the actual amount of assets to be greater than or equal to the reserves of the policy block. Others might require the amount of assets to exceed the basis used for crediting interest (e.g., policy account values).

The ASOP states that the investment return factors should be reasonably based on recent actual investment experience. Furthermore, Section 3.4.1 of the ASOP is explicit in not allowing future projected or assumed trends in improvement to be included, unless it is a result of a change in practice that has already occurred (such as a change in asset allocation). For example, in determining an investment return factor based on the

portfolio method, the actuary should not use any projected future improvement in returns based on an anticipated improvement in portfolio interest rates (note that an interest rate increase may not always be an improvement, or vice versa). However, if deterioration of the investment return factors is expected, less favorable assumptions appear to be allowable. Also, the illustrated scale may be based on non-level investment return assumptions, as long as the scale is not more favorable to the policyholder than the less favorable of the DCS or the currently payable scales.

The ASOP requires that the investment return factors be developed using procedures that have a sound theoretical basis and reflecting the insurer's actual practice. For indexed life products, the ASOP goes one step further and instructs the actuary to consider an appropriate time frame commensurate with the economic and business cycles and the characteristics of the underlying index that affect the investment assumption.

Many actuaries determine the investment return factors by dividing investment income derived from a block of assets by the average amount of assets in the block. An example of a simple formula that could be used to derive an investment return factor is as follows:

$$i = 2I / (A + B - I)$$

where i = investment return factor

I = investment income

A = assets at beginning of year

B = assets at end of year

More complex methods might incorporate the exact timing of income and smooth gains and losses. The investment return factors for a new block of assets might be based on the current market rate of the type of assets expected to be purchased.

Note that the investment return factors are generally not the interest rate credited or illustrated in a scale of nonguaranteed elements. The relationship between the investment return factors and the interest rate credited in a scale of nonguaranteed elements would generally be determined by company practice (i.e., the company's nonguaranteed element framework). Examples of company practice may be to credit the investment return less a spread, or to base crediting rates on current new money rates.

4) Q. How can ownership of or an investment in other lines of business or subsidiaries be incorporated into the development of an earned interest rate factor?

Pertinent Sections of ASOP:

Section 3.4.1(a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block.....

Section 3.4.1(h) Other lines of Business – If other lines of business are considered investments of the illustrated block of business, the actuary should consider whether cash flows originating in such lines are recognized in the assumptions underlying the disciplined current scale. In deciding whether and

how to reflect these cash flows, the actuary should consider the time horizon of the investment/investor relationship and the insurer's actual practice for reflecting these cash flows in determining nonguaranteed elements.

A. It is possible for a line of business to invest in another line of business or a subsidiary company, depending upon corporate structure and internal reporting practices. Such investment is required by the ASOP to be established in connection with asset allocations made to allocate investment income to policies, not derived solely for the purpose of self-support and lapse-support testing. According to such asset allocations, earnings from the investment in another line of business or subsidiary usually would flow to the block of business that made the investment. Intracompany borrowing may transpire by issuing notes from one line to another.

As stated in the ASOP, returns from investments in other lines of business or subsidiaries may be incorporated into the investment return assumption consistent with company practice. If the other lines are also subject to the Model, many actuaries would coordinate these assumptions. If the block of business assumes a periodic return from a subsidiary, the actuary for the subsidiary may consider an offsetting periodic expense or reduction in investment return.

5) Q. What is the earned rate for a new money product when no assets are purchased, for example when expenses exceed premium in early policy years?

Pertinent Sections of ASOP:

Section 3.4.1 ...To the extent actual experience is determinable, available and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference....

Section 3.4.1(a) Investment Return- The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block....

The actuary should have a reasonable basis for allocating investment income to policies, whether using the portfolio, segmentation, investment generation, or any other method. The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies. The investment return factors may be net of investment expenses or, alternatively, investment expenses may be treated separately as expenses.

The actuary should use procedures that have a reasonable theoretical basis for determining the investment return factors. In determining the investment return factors, the actuary should reflect the insurer's actual practice for nonguaranteed

elements with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.

A. As no assets are being purchased, the actuary needs to use judgment in developing the investment return factors. Various approaches are currently used in practice. Two approaches the actuary may consider are:

1. If the policy block has existing in force policies, the yields on recently purchased assets from the previously sold policies may be used to develop investment return factors for newly issued policies.
2. For a new policy block, the current yields on assets of the type expected to be used to support the policy block may be used to establish the investment return factors.

The actuary should document the assumptions used in the development of the investment return factors.

6) Q. What is an appropriate investment return factor assumption for DCS testing for new business when a company initially follows an investment generation approach to asset segmentation but ultimately combines all assets into a single portfolio after a specified number of years?

Pertinent Sections of ASOP:

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale –The actuary should use experience as analyzed within the insurer’s nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent that actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business....

Section 3.4.1 (a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block....

The actuary should have a reasonable basis for allocating investment income to policies, whether using the portfolio, segmentation, investment generation, or any other method. The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies....

The actuary should use procedures that have a reasonable theoretical basis for determining the investment return factors. In determining the investment return factors, the actuary should reflect the insurer’s actual practice for nonguaranteed

elements with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.

Section 3.4.1 (g) Changes in Methodology - When an insurer changes its methodology in determining nonguaranteed elements (for example, changing from portfolio rate methodology to a new money rate methodology, or adding a new underwriting class), the actuary should appropriately modify assumptions underlying the disciplined current scale to reflect the new methodology.

A. The ASOP states that either a portfolio average approach or an investment generation approach may be used for determining the earned interest rate factor. It also states that the determination of the investment return factor is to be reasonably based on recent actual investment experience of the assets supporting the policy block. The ASOP provides that on a change in methodology the actuary should appropriately modify the assumptions underlying the DCS to reflect the new methodology.

Most actuaries would not project an increased earned interest rate factor for durations subsequent to policy issue based upon anticipated yields on assets not yet acquired. Therefore, the earned interest rate factor as of the actuarial certification date would be no greater than the recent historical earned rate on a portfolio average basis or the current new money yields on the assets to be acquired by current new premiums (depending on the method actually utilized by the company to allocate investment income to policies). For a company that allocates investment income on an investment generation approach at policy issue and then combines assets into a portfolio average approach upon the attainment of a certain policy duration, two options appear to be utilized by actuaries depending upon the assumption as to what assets will be included in determining the earned investment rate:

1. Use the new investment generation yield as a level earned interest rate factor in all policy years; or,
2. Use the new investment generation yield as a level earned interest rate factor followed by a portfolio average earned interest rate factor once the assets are combined. If the portfolio average rate exceeds the new investment generation rate, some actuaries would be more conservative and use the lesser of the two rates.

As required by Section 3.10 of the ASOP, the description and rationale for the interest rate assumption should be documented.

C) ***ILLUSTRATED INTEREST CREDITING RATES***

1) Q. A company's illustrated and currently payable scales are often based on a credited interest rate or factor that is based upon an earned investment return less a required spread. Since the earned investment return could vary during the year, it is common practice to vary the illustrated and currently payable scales more often than annually. Does this practice force a re-filing of a new certification each time investment returns change?

Pertinent Sections of the ASOP:

Section 4.1 Prescribed Statement of Actuarial Opinion – The *Model* requires the illustration actuary to certify annually that the illustrated scale and the disciplined current scale are in compliance both with the requirements as set forth in the *Model* and with the requirements set forth in this ASOP. Certifications should also be made for newly introduced forms before a new policy form is illustrated....

As required by the *Model*, if an illustration actuary is unable to certify the illustrated scale for any policy form the insurer intends to use, the actuary should notify the board of directors of the insurer and the commissioner promptly of his or her inability to certify.

A. The annual certification states that the illustrated scales currently used are in compliance with the Model and the ASOP. The Model requires the illustration actuary to file this certification with the board and with the commissioner (a) annually for all policy forms for which illustrations are used, and (b) before a new illustrated policy form is used. In addition the Model requires notification to the board and commissioner if the actuary is unable to certify an illustrated scale the insurer intends to use or if an error in a previous certification is discovered. Many actuaries would not refile each time illustrated or payable investment returns are changed.

In the case of investment return changes, actuaries often determine that they would be able to certify the new scale (so that no re-filing or notification is then needed until the next scheduled annual certification). For example, if the earned investment return change is based on a change in the experience underlying the DCS and a spread is used to determine the illustrated nonguaranteed elements, then it generally follows (at least for a reasonable range of investment returns) that the new scale will also satisfy the requirements of the Model. Actuaries using a spread approach may want to initially test a range of earned investment returns to be satisfied that the spread will pass the tests under a range of DCS earned investment returns. There may also be other acceptable methods besides the spread approach which will allow changes in the credited interest rate (or other nonguaranteed elements) without requiring certifications more frequently than annually. So long as they have not determined that they are unable to certify a new illustration scale, many actuaries may not file a new certification until the next scheduled annual certification.

2) Q. Can illustrated nonguaranteed interest credits vary with duration?

Pertinent Sections of ASOP:

Section 3.3 Illustrated Scale Requirement - The *Model* requires that the illustrated scale must not be more favorable to the policyholder than the currently payable scale at any duration. In addition, the illustrated scale must be no more favorable to the policyholder than the disciplined current scale at any duration.

Section 3.4.1(a) Investment Return- The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block....

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right....

A. Section 3.3 of the ASOP requires that the illustrated scale (including varying interest credits and persistency bonuses) must be no greater than the lesser of the currently payable scale and the DCS at all durations. In addition, per paragraph 6.C of the *Model*, if the interest rate used to determine nonguaranteed elements is shown in the illustration, it may not be greater than the investment return underlying the DCS.

Per Section 3.5 of the ASOP, the actuary may perform the self-support and lapse-support tests in the aggregate; i.e., for a policy form. But in doing so, the actuary would be advised to recognize any material shifts in the distribution that may be expected to occur toward portions of the business that do not meet the tests in their own right. Many actuaries would want to consider whether varying interest credits might cause such a shift.

3) Q. Is it acceptable to illustrate interest credits for policies with large face amounts that are higher than interest credits for policies with small face amounts? Can illustrated nonguaranteed elements utilize an interest rate that is higher than the earned interest rate underlying the DCS?

Pertinent Section of ASOP:

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution

towards any portions of the business that do not meet the self-supporting test in their own right....

Section 4.1 ...The certification should disclose the following:...

- c. any inconsistencies between illustrated nonguaranteed elements for new policies and similar in force policies;
- d. any inconsistencies between the illustrated nonguaranteed elements for new and in force policies and the nonguaranteed element amounts actually paid, credited or charged to the same or similar forms.

Pertinent Section of Model:

Section 6.C If an interest rate used to determine the illustrated nonguaranteed elements is shown, it shall not be greater than the earned interest rate underlying the disciplined current scale.

A. In general, the Model and the ASOP allow the actuary to adopt a DCS in which the values for a nonguaranteed element assigned to the various classes within a policy form (such as risk class, policy size, policy duration, policyholder choice factors, etc.) vary, as long as these values are used in testing and appropriate disclosures are provided.

Per Section 3.5 of the ASOP, the actuary may perform the self-support and lapse-support tests in the aggregate, for a policy form. But in doing so, the actuary should recognize any material shifts in the distribution that may be expected to occur toward portions of the business that do not meet the self-support tests in their own right. This would be pertinent if the actuary determines that higher interest credits on large face amounts may cause a shift toward policies with higher face amounts.

Per Section 4.1 of the ASOP, there are various disclosures that must be contained in the annual certification that relate to the relationships between the currently payable scale, the illustrated scale and the assumptions underlying the DCS. The need for these disclosures may be affected by the existence of an illustrated scale with higher interest rates for large policy sizes. For example, the actuary would be required to state whether illustrated nonguaranteed elements for new (and in force) policies are consistent with the nonguaranteed element amounts actually credited or charged to the same or similar form. In addition, the actuary must also provide a disclosure in the certification whenever the actual credited rates for a given policy form turn out to be lower than what would be payable under the illustrated scales for a given policy size (taking into account any changes consistent with changes in the experience factors underlying the DCS).

Finally, per paragraph 6.C of the Model, if the interest rate used to determine nonguaranteed elements is shown in the illustration, it may not be greater than the earned interest rate underlying the DCS. Therefore, in the illustration of nonguaranteed elements, the Model and the ASOP appear to allow the use of a credited interest rate in excess of the earned interest rate underlying the DCS, as long as the self-support and lapse-support tests are met and as long as the illustration does not display an interest rate in excess of the earned interest rate underlying the DCS.

D) *EQUITY INDEX-LINKED PRODUCTS*

Index-Linked Universal Life is a universal life product where the credited rate is linked to growth in a capital market index. This design appears to require additional interpretation from the perspective of compliance with the Model and the ASOP because it was not anticipated when the Model was developed. The intent of this section is to describe some current practices and provide suggestions. These practices may also apply to other types of index-linked life products, as appropriate. Actuaries should consider applying the suggestions in other sections of this Practice Note to the extent possible, where it does not conflict with this section (e.g., with respect to policy loans).

1) Q. What investment return assumption are actuaries using in the self/lapse-support tests?

A. The investment return factors on non-hedging assets underlying the DCS should be reasonably based on actual investment experience, net of default costs, of the assets supporting the policy block. For the hedge assets, where the return assumption is sensitive to business or economic cycles, Section 3.4.1(a) of the ASOP states that the actuary should consider characteristics of the underlying index and an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience. Hedge costs may be highly sensitive to business or economic cycles as well. Actuaries, in determining the hedge costs used in the self/lapse-support tests, should reflect the actual hedge costs supporting the index linked product features. Most actuaries base this assumption on a best estimate of long-term hedge costs that would be considered reasonable over the testing period. Some actuaries may give some recognition to recent market conditions. As per Section 3.4.1 of the ASOP, hedge cost assumptions cannot be assumed to improve beyond the effective date of the illustrated scale.

If the hedge is assumed to perfectly match the product features, investment returns from the hedge assets would normally offset the index-linked interest crediting that the hedge assets are intended to hedge.

2) Q. Can gains from mid-year surrenders be including in the investment return assumption when performing the self/lapse-support tests?

A. One way to reflect investment gains from mid-year surrenders (i.e., excess investment gains due to policyholders lapsing prior to receipt of the index credit) may be to include them in the investment return assumption to the extent the actuary can justify such gains based on actual company practice and results. Many actuaries consider the possibility that mid-year surrenders may disproportionately occur when there is no gain, due to unfavorable index performance. After year five in the lapse-support test, such gains will be zero due to the assumption that there will be no surrenders.

3) Q. Neither the Model nor the ASOP appears to offer specific guidance in setting the assumed return of an index. What are commonly used approaches to setting it?

A. Many actuaries use a lookback approach to derive a level return. Using current index-linked product features (e.g., index cap remains at the current level in all hypothetical years), it is common to derive a hypothetical average credited rate over the last X years, using a time frame commensurate with business or economic cycles (X tends to range from 10 to 50, with most actuaries using 20-30 years for broadly diversified equity indexes, and for fixed investment indexes most actuaries would use a method consistent with non-indexed product practices). A variation of this approach is to take an average across multiple lookback periods, instead of a single, fixed period. Actuaries may wish to consider the issue day (e.g., January 1, June 1, September 1) assumed when deriving the average, if that has relevance to the results, e.g., monthly averaging of index returns. Some actuaries would determine the result by averaging across multiple issue days. For an index that has not been in existence for an appropriate past time frame, it may be necessary to use a reasonable surrogate index or estimated past index values in addition to the known index values. Regardless of the method used to determine the illustrated rate, as per Section 3.10 of the ASOP, the actuaries should retain documentation describing the basis for the assumption. Most actuaries would also include any supporting data. Except in cases where the rules for determining the index value have changed, most actuaries would not vary over time the procedure for determining the change in the value of the underlying index.

4) Q. When would it be appropriate to update the illustrated rate?

A. A common practice many actuaries use is to review the illustrated rate at least annually when using a fixed lookback period or following a change to any index-linked product feature. However, the illustrated rate should satisfy the requirements of the Model and the ASOP at all points in time as described therein. Depending on the changes that occur in the assumptions underlying the disciplined current scale, including assumptions for hedge costs and investment returns, most actuaries believe retesting the illustrated rate more frequently than annually may be necessary. Some actuaries would perform sensitivity testing of adverse assumptions along with their annual testing to determine the changes in assumptions during the next year that would still allow the illustrated scale to satisfy the ASOP.

5) Q. If my index-linked product offers multiple index buckets how many illustrated rates do I need?

A. Most actuaries would derive a separate illustrated rate for each index bucket. If the policyholder allocates premium and/or fund value across multiple buckets, one practice would be to blend the illustrated rate according to this allocation. Like other distribution of business assumptions, the self/lapse-support tests may reflect an expected blend across buckets. As per Section 3.5 of the ASOP, to the extent there is subsidization across buckets (i.e., certain buckets do not pass the self/lapse-support tests), the actuaries should recognize possible shifts in distribution. in determining the distribution assumption. This

is to satisfy the requirement to recognize possible shifts in distribution that may occur toward any portions of the business that do not meet the tests in their own right.

E) MORTALITY

1) Q. May mortality improvements or other trends be projected from the end of the recent historical period used as the basis for the DCS assumptions to the effective date of the scale of nonguaranteed elements?

Pertinent Section of ASOP:

Section 3.4.2 ...Actual experience may exhibit improvements from year to year. As required by the *Model*, such trends in improvement may not be assumed to continue into the future beyond the effective date of the disciplined current scale underlying the illustration....

A: The ASOP states that trends in improvement may be projected to the effective date of the DCS, but not beyond that date. In particular, experience mortality is often projected to improve over time, either by the company or by its reinsurers. Many actuaries would review the experience mortality assumption carefully to be sure that mortality improvement is not included explicitly or implicitly beyond the effective date of the DCS.

2) Q. We recently switched from nonsmoker/smoker to tobacco non-user/tobacco user but we do not have any mortality experience with the new classes. Would it be appropriate to test our business by splitting the insureds into three groups and testing as follows:

- a) Tobacco non-users tested with nonsmoker mortality,**
- b) Nonsmoking tobacco users tested with nonsmoker mortality, and**
- c) Smoking tobacco users tested with smoking mortality?**

Pertinent Sections of the ASOP:

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right....

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale - The actuary should use experience as analyzed within the insurer's nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from

actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference. As required by the *Model*, the experience factors underlying the disciplined current scale may not include any projected trends of improvement nor any assumed improvements in experience beyond the effective date of the illustrated scale, except as provided in section 3.8.

Section 3.8 Changes in Practice - An insurer may introduce certain changes in the way it conducts its business, which may have significant positive or negative effect on future experience. If the action has already occurred, but not enough time has elapsed for it to be reflected in the insurer's actual experience, it may nevertheless be reflected in the assumptions underlying the disciplined current scale....

A. The ASOP provides for application of reasonable actuarial judgment when a change in practice has been implemented but not enough time has passed for the change to be reflected in the insurer's own experience.

If the change in practice is a redefinition of underwriting classifications and if there is no evidence to suggest that aggregate mortality experience will change, then many actuaries believe that the expected mortality assumptions for the new classifications generally would replicate aggregate mortality in total.

In this particular example, the former nonsmoking underwriting class is split into non-tobacco users and nonsmoking tobacco users. The premiums charged to the individual policyholders reflect the new underwriting classification segments but the mortality assumption is for the combined nonsmoking class.

Since the ASOP specifically allows aggregation of underwriting classifications for self-support and lapse-support testing, use of the former nonsmoker mortality assumption would generally appear to be appropriate for testing tobacco non-users and nonsmoking tobacco users in the aggregate, as long as a defensible assumption with respect to the distribution of business between those two underwriting classifications is developed.

The smoker classification in this example is unchanged, so continuing to test this class with smoking mortality appears appropriate.

In other cases, a redefinition of underwriting classes may change the distribution of risks covered, effectively changing the expected level of aggregate mortality. Section 3.8 would appear to allow the actuary to reflect such expectations in the assumptions underlying the DCS, provided the changes are "real" and the actions leading to the expected change in experience have already taken place.

3) Q. When (1) underwriting requirements are changed, or (2) new underwriting classes are added, how should the impact on future mortality be determined?

Pertinent Sections of the ASOP:

Section 3.4.1 Assumptions Underlying the Disciplined Current Scale – The actuary should use experience as analyzed within the insurer’s nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference. As required by the *Model*, the experience factors underlying the disciplined current scale may not include any projected trends of improvement nor any assumed improvements in experience beyond the effective date of the illustration scale, except as provided in section 3.8.

Section 3.4.1(b) Mortality - The actuary should base the mortality experience factors on the insurer’s mortality experience, if credible, adjusted for risk class. In setting mortality experience factors, the actuary should consider credible variations by age, gender, duration, marketing method, plan, size of policy, policy provisions, risk class, and other items (or a combination thereof) consistent with the insurer’s structure of mortality experience factor classes. To the extent that the insurer’s actual experience is not sufficiently credible, the actuary should consider using other credible industry mortality experience, appropriately modified to reflect the insurer’s underwriting practices. If no credible industry mortality experience is available, the actuary should use professional judgment in modifying other sources of information (for example, general population mortality tables) in order to obtain the mortality assumption.

Section 3.4.1(g) Changes in Methodology – When an insurer changes its methodology in determining nonguaranteed elements ... the actuary should appropriately modify assumptions underlying the disciplined current scale to reflect the new methodology.

Section 3.4.2 ...When an insurer introduces a change in underwriting practice (for example, adding a new underwriting class) that is not expected to change the insured population, the actuary should divide the actual experience into the new underwriting classes in such a way that actual experience is reproduced in the aggregate.

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary’s professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right.

Section 3.8 Changes in Practice - An insurer may introduce certain changes in the way it conducts its business, which may have significant positive or negative effects on future experience. If the action has already occurred, but not enough time has elapsed for it to be reflected in the insurer's actual experience, it may nevertheless be reflected in the assumptions underlying the disciplined current scale. The actuary should consider recognizing actions such as the following, to the extent known to the actuary:

- a. Change Underwriting Standards – Introducing preferred risk, guaranteed issue, or simplified underwriting may impact the mortality assumption.....

The changes should have occurred in order to be reflected in the disciplined current scale and not simply be planned for in the future.

Section 3.9 Reliance on Data or Other Information Supplied by Others – When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, Data Quality, for guidance.

A. In either (1) or (2), a change in methodology may have occurred as outlined in 3.4.1 (g) with respect to mortality assumption determination. In such situations, the ASOP states that the actuary should consider appropriate modifications to the assumptions underlying the DCS to reflect the new methodology.

If there is no evidence to suggest that aggregate mortality experience will change, then many actuaries believe that the expected mortality assumptions would replicate aggregate mortality in total. Consistent with Section 3.4.2, many actuaries would divide the historical experience into the revised underwriting classes in such a way that historical experience is reproduced in the aggregate. Most actuaries would document evidence to support a mortality assumption that does not reproduce prior aggregate mortality experience. Situations that may warrant a mortality assumption change that does not reproduce historical experience are listed below, but many actuaries would determine such changes using evidence obtained from credible sources (i.e. underwriting studies, reinsurer data, etc.)

- In some cases, a redefinition of underwriting classes may change the distribution of risks covered, effectively changing the expected level of aggregate mortality.
- If underwriting requirements have changed, and there is credible insurer experience to suggest how much aggregate mortality might change, then, as outlined in 3.4.1(b), the actuary should base the experience factors on the credible insurer mortality experience adjusted for risk class.
- If credible insurer experience data is lacking on the revised underwriting, but in the actuary's professional judgment, mortality experience will change, then the actuary should consider using other credible industry mortality experience, appropriately modified to reflect the insurer's underwriting practices as outlined in Section 3.4.1.(b). Section 3.8 indicates that a change in practice that may have positive or negative effects on future experience may be reflected in the assumptions underlying the DCS if the changes have actually occurred (and are not simply "contemplated") even if not enough time has elapsed for the change to be reflected in the insurer's actual experience. Also, as stated in Section 3.9, when relying on data or

information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

- If suitable credible insurer data or industry mortality experience cannot be found, many actuaries would divide the actual experience into the new underwriting classes in such a way that the actual experience is reproduced in the aggregate. One common practice is to use insurer experience or other sources of data to determine an assumption for the distribution of business in the new classes and an assumption for the ratio of the mortality rates for the new classes and then derive experience mortality factors such that actual experience is reproduced in the aggregate, using a simplifying assumption such as a fixed (or varying) multiple applied to an intercompany mortality table. However, many actuaries would test the resulting mortality assumptions to ensure that projected mortality improvements are not inadvertently incorporated into the revisions made.

Care should be taken to ensure assumption changes are considered in any aggregate self-support testing (Section 3.5), as a change in underwriting requirements may impact both experience factors and assumed distributions, resulting in shifts towards portions of the business that may not meet the self-support test.

F) INVESTMENT INCOME ALLOCATION

1) Q. If a company does not specifically segment assets, are there any other methods in use for allocating investment income among policy forms?

Pertinent Section of the ASOP:

Section 3.4.1(a) Investment Return - The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block. ...
The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies....

A. The ASOP does not specifically mention asset segmentation as a method of allocating investment income among policy forms. Rather, it requires that the investment return factors be developed using the same method that is used to actually allocate investment income to policies. Asset segmentation is a common practice in the industry that could be used to allocate investment income and determine separate investment return factors for different groups of policy forms. If, in actual practice, a single portfolio interest rate were used to determine nonguaranteed elements for all policy forms, many actuaries would use a single investment return factor that is no higher than the portfolio interest rate for all policy forms. Another method in common use is the investment-year method.

If the company has adopted no method for allocation of investment income to groups of policy forms, many actuaries would use a single investment return factor for all policy forms. Alternatively, separate investment return factors could be developed based on company practices for determination of interest crediting rates.

2) Q. Some companies allocate earnings on assets held in surplus lines of business. These companies may allocate overhead expenses to the lines of business as well. How do actuaries reflect such allocations when developing the DCS?

Pertinent Sections of the ASOP:

Section 3.4.1(a) ...The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies....

Section 3.4.1(e)(1) ...Indirect expenses should be fully allocated using reasonable principles of expense allocation....

A. If the company has a corporate line of business and allocates certain overhead expenses and investment earnings from surplus to the corporate line, there are at least two practices that an actuary might follow. Some actuaries may exclude the expenses from the unit expense rates and exclude the earnings from the investment return factor. Other actuaries may include both the overhead expenses and earnings allocated from the corporate segment. Under the ASOP the method of expense allocation should be based on

reasonable principles, and the method of allocating earnings should use the same method that is used to allocate investment income to policies.

With no corporate line of business, the question becomes more complicated and the documentation typically becomes more important. If the company allocated the investment earnings in question to a particular line of business, then some actuaries would include this investment income and the associated assets in determining the investment return factor. Some actuaries would then also include a reasonable proportion in the line's overhead expense to this segment of the line. Again, according to the ASOP, the method of expense allocation should be based on reasonable principles, and the method of allocating earnings should use the same method that is used to allocate investment income to policies.

As required by Section 3.10 of the ASOP, the description of and the rationale for the assumptions should be documented.

G) EXPENSES

1) Q. How are direct expenses and indirect expenses defined?

Pertinent Sections of the ASOP:

Section 3.4.1(e)(1) Fully Allocated- . . .The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation....

Section 3.4.1(e)(2) Marginally Allocated- ...unit expenses calculated in a manner similar to fully allocated unit expenses except that indirect expenses, such as corporate overhead and general advertising, are not allocated to the policy forms.

A. “Direct” and “indirect” costs are not specifically defined in the ASOP. For purposes of developing a DCS, the actuary exercises judgment in determining which costs are direct and which are indirect. Corporate overhead and general advertising are examples given in the ASOP of indirect expenses. Medical and inspection fees incurred for underwriting a policy are examples of direct expenses. Often expenses that do not vary directly with the volume of business are considered indirect. However, some expenses may vary only when a certain threshold change in volume is obtained. In classifying these types of expenses as well as others as direct or indirect, some actuaries might consider how these expenses vary with changes in volumes as well as with the expense allocation methods and accounting practices of the company. The actuary should document the methodology used.

2) Q. If a company elects to use the GRET Table or the marginally allocated method, expenses most likely won't be consistent with the allocation of expenses in the company's statutory annual statement. Must fully allocated expenses be consistent with the allocation by line of business in the issuing company's statutory annual statement?

Pertinent Sections of the ASOP:

Section 3.4.1(e)(1) Fully Allocated—Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

Section 3.10 Documentation – The documentation that supports the actuarial certification described in Section 4.1 with respect to the construction of the disciplined current scale, maintained in conformance with ASOP No. 41, *Actuarial Communications*, should include the following:

- a. description of, and rationale for, the investment income, mortality, persistency, expense, tax, and other assumptions.

A. Many actuaries would choose expense allocations that are consistent with the allocation of expenses in a financial statement of the issuing company as they believe unit expenses should be based on expenses actually allocated to the policy block. Note that this may not necessarily mean that expense allocations are required to be exactly the same as those in the statutory annual statement of the company. There may be a number of situations where the expense allocations for testing purposes would not have to be identical to those in the statutory annual statement. For example, the ASOP allows for nonrecurring expenses to be spread over future years. In determining unit expenses, the ASOP appears to permit the actuary to use judgment in determining how to use recent experience in order to ensure that the experience is current, determinable and credible. In addition, there may be statutory requirements for the allocation of expenses in the statutory annual statement that may not be consistent with “reasonable principles of expense allocation” called for by the ASOP. Finally, a company may have more than one method of expense allocation in place (GAAP statements, other management reporting, pricing). One of these methods may be more appropriate for the purposes of the Model. Any of these reasons may cause the expense allocations used to be different from those in the statutory annual statement of the company.

Per Section 3.10 of the ASOP, the actuary should maintain a description of and rationale for the expense assumptions actually used in the development of the DCS’s. As part of this documentation, many actuaries would include the rationale for any differences with the company’s statutory annual statement allocation method.

3) Q. In an effort to improve efficiency or increase customer service, companies will sometimes look to create new processes. During the research and development (R&D) phase of these efforts, the company will often experience increased expenses. These expenses may be overhead expenses, but they could also be direct variable expenses. In some cases, the process may only be used for a single policy form during this R&D phase with the intent to use it for other forms when the process is fully developed. What flexibility does the actuary have in the allocation of these R&D expenses to avoid the burden of these excess expenses on, say, a single policy form?

Pertinent Section of the ASOP:

Section 3.4.1(e)(1) Fully Allocated – Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

A. Some actuaries consider R&D costs to be a significant and continuing expense on the theory that an ongoing business will necessarily spend a certain amount on R&D each year. Other actuaries prefer to treat R&D as a one-time expense since the share of the R&D related to a given policy form is nonrecurring. If R&D costs are nonrecurring, the ASOP allows these costs to be spread over a reasonable number of years.

According to the ASOP, direct costs must be allocated to the group of policies generating those costs. This could mean the costs are allocated to the specific policy form or forms involved in the R&D phase, or, if R&D costs are being incurred for the ultimate benefit of a larger group of policy forms, many actuaries may choose to allocate direct R&D costs to this larger group of policies.

4) Q. How should one-time expenses be handled?

Pertinent Sections of the ASOP:

Section 3.4.1(e)(1) ...Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

Section 3.4.2 ...The actuary should reflect changes in experience promptly once changes have been determined to be significant and ongoing....

A. One-time expenses that are significant and ongoing (for example, systems development costs) are required by the ASOP to be included in determining allocable expenses, but they may be spread over a reasonable number of years. Many actuaries might conclude that one-time expenses that are not significant or that are not expected to be ongoing (for example, the cost of rebuilding an office after a fire) may be excluded from fully allocated expenses. Of course, it would also be acceptable to include them. Within this broad limitation, the actuary may exercise judgment in determining which one time costs will be included and which will be excluded from fully allocated expenses. The rationale for such judgments is then documented.

It may seem inconsistent to consider certain one-time expenses to be ongoing. Some actuaries believe there can be situations, such as product development or systems development, where the expenses associated with a particular project are “one time” but the expectation is that the resources will continue to be used on similar projects in the future. These actuaries include these significant and continuing “one time” expenses in fully allocated expenses. Alternatively, other actuaries spread these costs over a reasonable number of years. For systems development, the ASOP uses an example of the system lifetime. As an alternative, a nonrecurring cost could be amortized over the period during which the benefits related to the expense are expected to accrue. The actuary may find it helpful to consider the accounting treatment of such costs.

5) Q. What flexibility does the actuary have in varying the overhead allocation method?

Pertinent Section of the ASOP:

Section 3.4.1(e)(1) Fully Allocated—Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

Section 3.4.1(e) ...The actuary should make the comparison and choice of expense factor base in the aggregate for all policy forms. The actuary should use the same unit expense basis for all policy forms tested.... When calculating unit expenses, the actuary should select average policy size and volume of sales assumptions that are appropriate for the policy form.

A. While business objectives may cause a pricing actuary to design products to be more or less competitive, it is a stated goal of the Model to ensure that the illustrations of those products do not mislead the purchasers as to the future performance of the product.

If fully allocated expenses are used for all policy forms for the certification year, a reasonable method must be used to allocate indirect costs in determining the DCS. Some actuaries would consider an allocation to be reasonable if it is consistent with the expense allocation method used in the nonguaranteed element framework. For example, an allocation method used for financial reporting (statutory, GAAP, or management reporting) could be part of the nonguaranteed element framework, although other reasonable methods are also possible. Alternatively, the actuary may decide to use marginally allocated expenses or the GRET Table for all policy forms for the certification year. If marginally allocated expenses are used, indirect expenses such as corporate overhead and general advertising are not allocated to the policy forms and the marginally allocated expenses must be at least as large as the GRET in aggregate.

6) Q. May indirect expenses be allocated to corporate lines, fraternal activities or other non-life insurance operations?

Pertinent Section of the ASOP:

Section 3.4.1(e)(1): Fully Allocated – Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring

costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

A. Actuaries may allocate indirect expenses to corporate, fraternal, or other non-life operations, so long as it can be documented that a reasonable basis is used for fully allocating overhead expenses. One way to document that expenses were allocated appropriately would be to use the expense allocations that are actually used in financial statements of the company (e.g., statutory, GAAP or other management reporting). While other methods of allocation may also be reasonable, it may be more difficult to document that such methods are reasonable and that they are not being used for the purpose of developing expense allocations that may mislead customers as to the future performance of the product. For example, in the absence of financial statements that provide documentation, it may be difficult to demonstrate the soundness of allocating overhead expenses to a corporate line that are greater than the revenue expected to be generated by that line (e.g., investment income and dividends from assets “owned” by the corporate line).

7) Q. What methods are likely to be used for allocating overhead to lines of business and policy blocks?

Pertinent Section of the ASOP:

Section 3.4.1(e)(1) Fully Allocated—Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

Section 3.4.1(e) ...The actuary should make the comparison and choice of expense factor base in the aggregate for all policy forms. The actuary should use the same unit expense basis for all policy forms tested.... When calculating unit expenses, the actuary should select average policy size and volume of sales assumptions that are appropriate for the policy form.

A. Actuarial practice regarding the allocation of indirect costs, including overhead expenses, varies widely. It is important to determine that the expenses being allocated are actually indirect expenses (indirect costs are only those expenses that are not directly generated by particular groups of policies, such as overhead and general advertising). The actuary may consider the company's actual practices for recording expenses in determining which are direct and which are indirect. Once the indirect expenses are identified, the ASOP then requires that a reasonable basis of expense allocation be used. Some actuaries would consider an allocation to be reasonable if it is consistent with the expense allocation method used for financial reporting (statutory, GAAP, or management reporting). Other actuaries might consider an allocation to be reasonable as long as

application of the unit expense factors reproduces recent historical expenses in the aggregate, adjusting for one time expenses that are spread over a number of years. The actuary might also consider the expense allocation method used for determining pricing expenses, particularly if the necessity for future changes to nonguaranteed elements will be determined using these pricing expenses. Note that the aggregate pricing expenses must cover all direct and indirect expenses, excluding certain nonrecurring expenses, in order to be considered fully allocated.

Units commonly used to allocate indirect expenses include (but are not limited to): assets, direct expenses, premiums, commissions, volume, policies in force or pre-overhead profits. Allocations generally may be split between in force blocks and new issues. Different methods may be appropriate for allocating expenses at different levels. For example, one method may be used for allocating expenses to a line of business, with a different method being used to allocate expenses to individual policy forms within that line. Use of these units, in any combination, may be deemed a reasonable basis in most instances provided that both the units and total indirect expenses actually used were based on recent experience.

8) Q. For fraternal companies, must fraternal expenses be allocated to life business for the purpose of the self-support and lapse-support tests?

Pertinent Sections of the ASOP:

Section 3.4.1(e)(1) Fully Allocated—Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

A. Per the ASOP, if the insurer is using fully allocated expenses in the calculation of the DCS, indirect costs should be fully allocated using reasonable principles of expense allocation. Professional judgment may be required to evaluate the reasonableness of a given basis of expense allocation. For example, some actuaries might consider a reasonable approach to be the one that provides the highest expectation for allocated expenses to be covered by the expected marginal revenues from each life policy block or non-life line of business. With this approach, the actuary might allocate fraternal expenses to a fraternal line of business to the extent that future revenues from the fraternal line could be expected to support such expenses. Any expenses not allocated to the fraternal line would then generally be included with other indirect costs and allocated appropriately to the life (and other non-life) lines of business. Depending on the allocation philosophy, other reasonable approaches to the allocation of expenses to fraternal lines may also be possible.

One way to document that expenses were allocated appropriately would be to use the full expense allocations that are actually used in financial statements of the company (e.g., statutory, GAAP, or other management reporting).

If the insurer is using GRET unit expenses or marginally allocated expenses in the calculation of the DCS, the fraternal expenses would not likely be allocated to the life business.

9) Q. How is inflation taken into account in determining DCS expense factors?

Pertinent Section of the ASOP:

Section 3.4.2 ...If trends indicate that significant and continuing deterioration in an experience factor has occurred or, in the actuary's professional judgment, is likely to occur between the date of the experience study and the effective date of the disciplined current scale underlying the illustration, the actuary should recognize such deterioration in determining the assumptions to be used....

A. The ASOP requires the actuary to determine whether a significant and continuing deterioration in expenses has occurred or is likely to occur between the recent historical period on which the assumptions are based and the effective date of the scale. In forming this judgment, some actuaries depend on such considerations as the recent trends in unit expenses of the company and the length of time between the recent historical period and the effective date. Others may take into account changes in general price and wage inflation as indicated by the government or other indices between the recent historical period and the effective date. If judged to be significant and continuing, the ASOP requires the actuary to recognize any such deterioration in the DCS assumption.

The ASOP does not require that the effects of inflation after the effective date of the scale be taken into account in establishing the DCS expense assumptions. Note that the DCS expense assumptions may differ from the assumptions actually used to establish the nonguaranteed elements.

H) GRET

1) Q. Suppose a policy form is sold through multiple distribution channels. How is the GRET applied in such cases? For example, does one pick the predominant distribution system and apply those factors, or is some sort of proration done?

A. The GRET factors for different distribution systems are derived from data for companies that are predominately in the given line of business. The GRET is derived from published information and is not as detailed as a functional cost study. It is anticipated that in the future, refinements will be made to the development of expense factors by distribution system. Therefore, at the present time, current practices include either proration (the use of the appropriate GRET factors for each distribution system) or the use of the set of factors applicable to the predominant line of business. The one restriction under the Model is that a company may not use the GRET for one line of business and fully allocated expenses for another line.

2) Q. When using the GRET are you tied to those unit factors in developing the DCS for each policy form?

Pertinent Section of the ASOP:

Section 3.4.1(e) ...The actuary should make the comparison and choice of expense factor bases in the aggregate for all policy forms.

Pertinent Section of the Model:

Section 4.K.(1) ...The insurer may choose to designate each year the method of determining assumed expenses for all policy forms from the following:...

A. If a company chooses to use GRET as the source of the minimum assumed expenses for a given year, then that table should be used for all policy forms in the aggregate.

Some actuaries are comfortable using the GRET as what they believe to be a “safe harbor” allowing deviations by policy forms but ensuring that expenses in the aggregate for that distribution system equal those derived from the GRET for all policy forms. For example these actuaries may believe it to be appropriate to consider deviations from the GRET for certain forms of coverage, say term vs. permanent. Actuaries should document the use and rationale for this approach.

Note that there are different GRET factors for different distribution systems. If the GRET is used in a given year for one distribution system, to be in compliance with the Model, the appropriate GRET factors must be used for all other distribution systems.

3) Q. The 2001 GRET report indicated that “premiums for single premium products should be multiplied by 6% prior to the application of the percent of premium factor.” It also stated that in the development of the expense factors “single premiums were weighted using 6% after reduction for any dividends applied.” In using the GRET table to estimate expenses, should premiums for single premium products be reduced by an estimate of “dividends applied” prior to multiplying by 6%?

A. Although more recent GRET reports have not explicitly discussed adjustment for single premiums, as of the date of this practice note, the same methodology continues to be used in the development of the GRET table, and the 6% adjustment would likely be applicable and consistent with the 2001 and earlier methodology.

The use of a 6% adjustment was taken from LOMA’s expense study methods, the basis for allocating expenses by function in the development of the GRET factors, and is intended to represent the reduced sales overhead as a percent of premium inherent in single premium business. The reduction of the data from the single premium line of the annual statement for dividends applied is done in order to arrive at a premium number that represented the volume of single premium business which was produced by the distribution system and to which the percent of premium factor should be applied. Consistent with the method that is used to develop the GRET, most actuaries believe the single premium for an illustrated product should be reduced for any dividends applied in the first policy year before the application of the 6% multiplier and the percent of premium expense factor.

4) Q. Besides single premium products, can non-level premium products apply a first year premium adjustment factor before applying the GRET percent of premium factor?

A. The percent of premium expense factor of the GRET is an acquisition expense factor that is applied only in the first year and represents that portion of the sales overhead associated with a product which is not paid in the form of a commission. The factors that are developed for the GRET use unadjusted statutory data that include only those premiums allocated to the first year of products in companies’ annual statements.

One possible practice that a company could use in the application of the percent of premium factor to non-level premium products, e.g., universal life with substantial pour-in premiums, is to use differing percent of premium factors on a product-by-product basis such that the GRET expenses were reproduced on an aggregate basis. The different percent of premium factors and their multipliers would then result in a weighted product equal to the GRET percent of premium factor multiplied by total anticipated first year premium (adjusted as necessary for single premium products).

Consistent with the method that is currently used to develop the GRET, the 6% factor is specific to single premium as reported in the statutory annual statement. It would be

inconsistent to use it for any other types of reported premium definitions, such as universal life pour-in premiums.

5) Q. The ASOP states that investment return factors “may be net of investment expenses, or, alternatively, investment expenses may be treated separately as expenses.” Does the GRET reflect investment expenses?

Pertinent Section of the ASOP:

Section 3.4.1(a) ...The investment return factors may be net of investment expenses, or, alternatively, investment expenses may be treated separately as expenses.

A. The GRET expense factors were derived from annual statement data which excluded those expenses that had been allocated to the investment line. Therefore, when the GRET factors are used, investment related expenses are to be considered separately, either as an addition to the expenses produced by the GRET factors or as a reduction to investment income.

6) Q. Suppose the new GRET with higher expense factors has been approved with an effective date in the future. Does this affect the GRET factors to be used by the illustration actuary for certifications made prior to this date? Are any recertifications required for any illustrations that were certified using the old GRET? What if the new GRET is lower than the current GRET?

Pertinent Sections of the ASOP:

Section 3.4.1 (e) All Other Expenses - As described in the Model, the actuary should consider whether the minimum expenses to be used in the calculation of the disciplined current scale for all policy forms during the certification year are based on sections (1), (2), or (3) below and are subject to the criteria that follow them:

1. Fully Allocated - ...
2. Marginally Allocated - ...
3. Generally Recognized Expense Table (GRET) – GRET unit expenses are obtained from an industry expense study based on fully allocated expenses representing a significant portion of insurance companies and approved for use by the NAIC or by the commissioner.

If no generally GRET is approved by and available, the *Model* requires the use of fully allocated expenses. If a GRET is approved and available, the *Model* allows the use of either a GRET or fully allocated expenses. The *Model* permits the use of marginally allocated expenses only to the extent that they generate aggregate expenses that are at least as large as those generated by a GRET.

The actuary should make the comparison and choice of expense factor bases in the aggregate for all policy forms. The actuary should use the same unit expense

basis for all policy forms tested. For example, the actuary should not use marginal expenses for one policy form and fully allocated expenses for another policy form. Once the actuary selects the unit expense basis, the actuary should use that basis for the entire certification year....

Section 3.4.2 ...The actuary should reflect changes in experience promptly once changes have been determined to be significant and ongoing.

A. The impact that a new GRET will have on the expense assumption depends on the expense allocation method chosen to be used for the certification year. The GRET table can be used instead of fully allocated expenses, if it is approved and available as of the date of the certification. Alternatively, marginally allocated expenses may be used as long as the marginally allocated expenses exceed the GRET in the aggregate.

If the GRET was used in certifying the DCS, then many actuaries would retest all products previously certified to make sure that these products would still pass the self-support tests using the new GRET. According to Section 3.4.2 of the ASOP, when experience factors underlying the DCS have changed (and where such changes have been determined to be current, determinable and credible), the actuary should reflect changes in experience promptly. Therefore, the actuary may want to take steps to ensure that the currently illustrated scales are still in compliance with the Model using the new GRET. Changes may be required to the DCS, if the new GRET contains expenses factors that are higher than the old GRET. However, some actuaries would use the GRET in effect at the time of the certification and would regard this GRET as being applicable for the entire certification year, without regard to future GRETs. Note that Section 3.4.1.(e) of the ASOP states that “once the actuary selects the unit expense basis, the actuary should use that basis for the entire certification year.” Some actuaries interpret this to mean new policy forms being introduced on or after the effective date of the new GRET should use the new GRET, but those introduced prior to the effective date would use the old GRET. For in force blocks of business, the new GRET factors would be used for future durations, but the GRET in effect in each prior year may continue to be used for those years.

If marginal expenses are being used to determine the DCS, the marginal expenses must be higher in the aggregate than those generated by the GRET. Many actuaries would compare the aggregate marginal expenses to the new GRET to make sure that the marginal expenses continue to exceed the GRET. If the marginal expenses continue to exceed the GRET, then the new GRET has no impact on the DCS. However, if the marginal expense factors produce aggregate expenses less than the new GRET, several interpretations are possible. Many actuaries believe marginal expenses should continue to be used, since the ASOP states “once the actuary selects the unit expense basis, the actuary should use that basis for the entire certification year.” Other actuaries believe that the provision of the ASOP stating “the *Model* permits the use of marginally allocated expenses only to the extent that they generate aggregate expenses that are at least as large as those generated by a GRET” may take precedence and may require that the new GRET be used. An alternative approach would be to increase the marginal expense factors, so that they exceed the GRET in aggregate.

If the new GRET is lower than the old GRET, any DCS determined using the old GRET should still be compliant.

I) FEDERAL INCOME TAXES

1) Q. Some insurers establish nonguaranteed elements without making a specific charge for federal income tax. How should federal income tax be taken into account in establishing the DCS for such policies?

Pertinent Section of the ASOP:

Section 3.4.1(f) Taxes – The actuary should reflect all cash flows arising from applicable taxes. Income taxes should be recognized in accordance with their impact by duration in the development of the disciplined current scale. Non-income taxes that are classified as investment taxes may be treated as a deduction from the investment return or may be treated separately. Other categories of taxes, such as premium taxes or employment taxes, may be handled separately or included in the category of all other expenses, as outlined in Section 3.4.1(e) [of the ASOP].

Details of taxation vary widely, depending on the application of law and regulation in various jurisdictions. The actuary should consider the insurer's actual practices for allocating taxes for nonguaranteed elements in determining the tax experience factor.

A. According to the ASOP, when developing a DCS the actuary should consider the insurer's actual practices for allocating taxes in setting nonguaranteed elements. However, the ASOP also requires the actuary to include all cash flows arising from applicable taxes. Thus, the method for taking taxes into account in setting nonguaranteed elements may be different than the method for taking taxes into account in developing a DCS. For example, a scale of nonguaranteed elements could be established without a charge for federal income tax, assuming that tax would be paid from any profits realized on the business. However, in developing the DCS, the ASOP would require the actuary to reflect all applicable taxes, which would include federal income tax, in the cash flows.

Many actuaries use approximate methods to determine these cash flows. This appears to be permitted by the ASOP, provided these methods recognize the impact of income taxes by duration.

2) Q. The mutual company add-on tax (IRC Section 809) was repealed effective in 2005. Should in force illustrations reflect this tax?

Pertinent Section of the ASOP:

Section 3.4.1(f) Taxes - The actuary should reflect all cash flows arising from applicable taxes. Income taxes should be recognized in accordance with their impact by duration in the development of the disciplined current scale....

A. The section in the prior ASOP that dealt with taxes said in effect that the mutual company add-on tax may be omitted in computing the self-support test. The April 2006 Transmittal Memorandum that accompanied an exposure draft of the current ASOP explained that this provision was being eliminated due to the mutual company add-on tax

being deleted from the tax code. It did not express an intention to remove this provision relative to testing in force illustrations at historical durations where the tax was in effect. The answer to Question 11.12 in the NAIC Question and Answers document to the Life Illustrations Model Regulation (dated December 19, 1996) contains a provision that says, in effect, that the mutual company add-on tax may be omitted. Many actuaries continue to omit this tax in computing the self-support test for in force illustrations at historical durations where the tax was in effect. Some actuaries may include this tax at those durations if its inclusion does not cause a policy form that would otherwise fail the test to pass. Using a simplified approach for this tax, rather than a more detailed approach that would take into account the impact of the tax by duration, is also a current practice.

3) Q. Can FIT loss carry-forwards be reflected in DCS assumptions?

Pertinent Section of the ASOP:

Section 3.4.1(f) Taxes – The actuary should reflect all cash flows arising from applicable taxes. Income taxes should be recognized in accordance with their impact by duration in the development of the disciplined current scale. Non-income taxes that are classified as investment taxes may be treated as a deduction from the investment return or may be treated separately. Other categories of taxes, such as premium taxes or employment taxes, may be handled separately or included in the category of all other expenses, as outlined in section 3.4.1(e) [of the ASOP].

Details of taxation vary widely, depending on the application of law and regulation in various jurisdictions. The actuary should consider the insurer's actual practices for allocating taxes for nonguaranteed elements in determining the tax experience factor.

A. According to the ASOP, when developing a DCS the actuary should consider the insurer's actual practices for allocating taxes in setting nonguaranteed elements and should include all cash flows arising from applicable taxes. Thus, many actuaries would reflect any FIT loss carry-forwards in DCS assumptions based on the current tax law and based on how those taxes are reflected in the insurer's nonguaranteed element framework. Many actuaries consider whether the insurer will actually be able to take credit for any FIT loss carry-forwards in future tax returns.

J) DISCIPLINED CURRENT SCALE

1) Q. The Model and the ASOP refer to a DCS that is based on underlying experience factors. However, the Model and ASOP do not explicitly describe how to calculate the DCS once the appropriate factors are determined. How is a DCS calculated?

Pertinent Section of the ASOP:

Section 2.3 Disciplined Current Scale—A scale of nonguaranteed elements, certified annually by the illustration actuary, constituting a limit on illustrations currently being illustrated by an insurer that is reasonably based on actual recent historical experience and that satisfies the requirements set forth in the *Model*.

A. Nonguaranteed elements have many forms (e.g., dividend scales, universal life charges/credits, indeterminate premiums). Within each form, there may be many variations as to how nonguaranteed elements are typically calculated (e.g., various types of dividend formulae, different methods of calculating universal life account values, termination dividends, various types of bonuses, etc.). Neither the Model nor the ASOP appear to restrict how nonguaranteed elements may be calculated. In some situations, nonguaranteed elements may be calculated by formulae directly from the underlying experience factors. Dividends on participating policies are often calculated in this manner. In other situations, nonguaranteed scales (calculated by other means) may be indirectly based on underlying experience factors through the use of empirical profit or cash flow testing. The nonguaranteed elements for universal life and indeterminate premium plans are often calculated in this way. The actuary may also want to refer to ASOP No. 1 and ASOP No. 15 for additional guidance regarding the determination of nonguaranteed elements.

The Model and ASOP do not appear to stipulate the specific method for calculating the DCS. However, in practice many actuaries set the DCS equal to the illustrated scale. Using this approach, the DCS must satisfy the self-support and lapse-support tests or, if applicable, meet the requirements of Section 3.7 of the ASOP. The required tests prescribe the calculation of the accumulated policy cash flows at future points in time, assuming that the nonguaranteed scale being tested is in effect and assuming the DCS experience assumptions. The ASOP requires that these accumulated policy cash flows equal or exceed the corresponding surrender value on or after the 15th policy anniversary (20th policy anniversary for second-to-die policies) or expiry, if sooner. Thus, there is likely to be more than one scale of nonguaranteed elements (for a given set of experience factors) that satisfy the requirements of the self-support and lapse-support tests. The dynamics of the required tests may drive the pattern of the scale that the actuary chooses. In practice, many actuaries experiment with applying the tests to different patterns of nonguaranteed elements before choosing an illustrated scale that meets the requirements of the Model and the ASOP while satisfying the marketing and profitability objectives of the company.

2) Q. Is a DCS required to be used in determining a currently payable scale and generating an in force illustration? Can a DCS and a currently payable scale cross over by duration?

Pertinent Sections of the ASOP:

Section 1.2 Scope - This standard does not apply to actuaries when performing professional services with respect to the determination of nonguaranteed elements payable. Determination of these items, as well as illustrations not included in the scope of this ASOP, are covered by ASOP No. 1, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, or ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*....

Section 3.3 Illustrated Scale Requirement – The Model requires that the illustrated scale must not be more favorable to the policyholder than the currently payable scale at any duration. In addition, the illustrated scale must be no more favorable to the policyholder than the disciplined current scale at any duration.

A. Neither the Model nor the ASOP provide guidance as to how currently payable scales are determined. ASOP No. 1 and ASOP No. 15 provide guidance on the determination of nonguaranteed elements and dividends, respectively. However, these two ASOPs do not discuss a DCS. Thus, neither the Model nor any ASOP appears to require the DCS to be used for the purpose of determining currently payable scales.

Any illustrated scale subject to the Model (including in force illustrations) must not be more favorable to the policyholder than the lesser of the DCS and the currently payable scale at any duration. If, by direct comparison of the three scales, the actuary can determine that illustrated policyholder values will be less at every duration than the values resulting from the DCS and the currently payable scale, then the illustrated scale is in compliance. However, depending on the structures involved in each scale, it may be that the actuary cannot make such a determination. In this case, it may be necessary to evaluate the policyholder values resulting from the DCS, the currently payable scale, and the illustrated scale to show that the illustrated scale is not more favorable to the policyholder than the other two at any duration.

Since the Model doesn't regulate the currently payable scale, it may be possible for the DCS and the currently payable scale to cross over by duration. For example, the DCS may be lower than the currently payable scale in year five, with the opposite true in year six. If this is the case, then as described above the policyholder values under all three scales may need to be evaluated when making the required comparisons.

3) Q. May a DCS be changed more often than annually? Must a changed scale be refiled?

Pertinent Sections of the ASOP:

Section 2.3 Disciplined Current Scale - A scale of nonguaranteed elements, certified annually by the illustration actuary, constituting a limit on illustrations

currently being illustrated by an insurer that is reasonably based on actual recent historical experience and that satisfies the requirements set forth in the *Model*.

Sect. 3.4.2 ...The actuary should reflect changes in experience promptly once changes have been determined to be significant and ongoing....

Section 4.2 Notice of Error in Certification - As required by the *Model*, if an error in a previous certification is discovered, the illustration actuary (or successor illustration actuary) shall promptly notify the board of directors of the insurer and the commissioner.

The certification should be considered in error if the certification would not have been issued or would have been materially altered had the error not been made.

The certification should not be considered to be in error solely because of data that become available, or information concerning events that occurred, subsequent to the certification date.

A. The *Model* and the ASOP discuss annual testing and certification of scales and testing and certification prior to issuing new policy forms. Nothing in the ASOP appears to prevent an actuary from changing and retesting a scale more frequently. Changes in interest rates or a new mortality study might raise this issue. Many actuaries may try to anticipate such changes through some type of sensitivity testing during the regular self-support and lapse-support tests. Others may not.

Most actuaries would not refile the certification for a scale that was changed between annual certifications, while still determining that it was compliant. The *Model* requires an annual certification for all policy forms using illustrations and a certification before a new policy form is illustrated.

4) Q. How do the Model and ASOP apply to new sales and in force policies for a product that has only guaranteed elements for the first 24 policy years and then has nonguaranteed elements starting in the 25th year?

Pertinent Sections of the Model:

Section 6B When using an illustration in the sale of a life insurance policy, an insurer or its producers or other authorized representatives shall not ... (10) Use an illustration that is not "self-supporting."

Section 4O Self-supporting illustration "means an illustration of a policy form for which it can be demonstrated that, when using experience assumptions underlying the disciplined current scale, for all illustrated points in time on or after the fifteenth policy anniversary or the twentieth policy anniversary for second-or-later-to-die policies (or upon policy expiration if sooner), the accumulated value of all policy cash flows equals or exceeds the total policy owner value available."

Section 4C Disciplined current scale means a scale of nonguaranteed elements constituting a limit on illustrations currently being illustrated by an insurer...

Pertinent Sections of the ASOP:

Section 4.1 The *Model* requires the illustration actuary to certify annually that the illustrated scale and the disciplined current scale are in compliance both with the requirements as set forth in the *Model* and the requirements set forth in this ASOP....

Section 3.5 ...The *Model* requires the following self-supporting test. At every illustrated point in time starting with the fifteenth policy anniversary (with the twentieth policy anniversary for second-or-later-to-die policies), the accumulated value of all policy cash flows, when using experience assumptions underlying the disciplined current scale, should be equal to or greater than the illustrated policyholder value, i.e., the cash surrender values and any other illustrated benefit amounts available at the policyholder's election....

A. As the ASOP and Model do not appear to provide any exception or variation for this type of product, it would appear that the self-support and lapse-support tests may need to be performed for this type of policy form the same as they would for any other policy form. If the policy form passes these tests then the illustration actuary can provide certifications as required.

However, if the policy form does not pass these tests, then reducing the nonguaranteed elements in years 25 and later will not necessarily allow the product to pass. For example, if the product fails the test in year 15, changing the non-guaranteed elements in policy years 25 and later will not allow the product to pass the test.

For new sales, the product may be revised so that it passed the self-support and lapse-support tests. Alternatively, the company may elect to sell the product in the future without using illustrations.

For in force policies that do not pass the tests, guaranteed values could be shown at all future durations for the current, mid-point, and guaranteed scales (i.e., the least favorable value for all nonguaranteed elements may be used in illustrations). Illustrating the least favorable scale possible would be seen by many actuaries as a reasonable limit on illustrations in this situation. However, if the failure occurred in previous years, and the in force block now passes for all future years, then many actuaries may consider the scale to meet the requirements. Alternatively, if the company has indicated its intent and ability to continue these distributions for the foreseeable future, distributions of surplus could be used when preparing the testing for these in force policies.

K) *SIMILAR PRODUCTS AND POLICY FORMS*

1) Q. How are assumptions for similar products sold by affiliated companies in a holding company structure determined?

Pertinent Section of the ASOP:

Section 3.4.1 ...To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference....

A. Where significant differences in experience exist among products sold by affiliated companies and credible data are available, many actuaries would develop unique experience factors. However, many actuaries may also find it reasonable to assume that similar products sold by affiliated companies would have similar experience (for example, if the sales take place in similar markets, if administrative and investment functions are centralized, etc.). Further, internal record-keeping practices may make it difficult to differentiate experience between affiliated companies. Since using data of other companies is allowed by the ASOP, many actuaries believe the ASOP permits the common actuarial practice of using the combined data of affiliated companies to develop a single set of experience factors to be used by the similar products of affiliated companies.

2) Q. If a policy form is sold with different rates depending on the circumstances (e.g., a group form sold to groups with differing characteristics), is the form with its different rates to be considered a single policy form, or is each set of rates treated as a separate policy form for purposes of passing the self-support and lapse-support tests independently?

Pertinent Section of the ASOP:

Section 3.5 The Model requires every policy form illustrated by an insurer to be self-supporting according to the assumptions underlying the insurer's disciplined current scale. This requirement applies to the illustration of policies in force for less than one year....

In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution

towards any portions of the business that do not meet the self-support test in their own right.

A. This question asks for guidance as to what is considered a “policy form.” From a regulatory perspective most actuaries believe “policy form” generally refers to the contract structure that is filed with the various states. Within this regulatory perspective, however, neither the Model nor the ASOP defines this term. The ASOP specifically states that underwriting classification and policyholder choice factors may be tested in the aggregate. It therefore appears that cases can be aggregated if the differences could be characterized as differences in underwriting classification and/or policyholder choice factors. Differences in rates among different groups generally result from differences in the underwriting characteristics of the groups, or from the preferences of the policyholders. Therefore, provided that the benefit and premium patterns for the groups are similar, it may be reasonable to combine the groups for testing purposes. As stated in the last sentence of Section 3.5, possible shifts in distribution towards any portions of the business that do not meet the self-support or lapse-support tests in their own right (among cases, in this instance) should be appropriately reflected in the assumptions used in performing the tests.

3) Q. A company may have several policy form numbers for a single product that vary by underwriting class or certain product features. In this situation, what is the definition of a policy form for the purpose of aggregating results of self-support and lapse-support tests?

Pertinent Section of the ASOP:

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary’s professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right.

A. Policy form numbers that vary by underwriting classifications or policyholder choices are commonly considered to be no different in aggregate than a single policy form number with a variety of underwriting classes and policyholder choices. Using this rationale, many actuaries will treat policy form numbers under the same product as a single policy form for the purpose of performing the self-support test in aggregate.

As stated in the ASOP, the actuary assumes a distribution among underwriting classes and policyholder choice factors and recognizes possible shifts in distribution toward portions of the business that fail the self-support test. These distributions are to be based on actual experience, if available. The actuary would generally assume such a distribution among policy forms, and any possible shifts in distribution, in the same manner.

The actuary might consider developing additional documentation of the rationale for combining such policy form numbers as well as the difference among them.

L) RIDERS

1) Q. How may riders be tested for self-support and lapse-support?

Pertinent Section of the ASOP:

Section 3.5 ...Policyholder choices reflected in the preparation of an illustration include, but are not limited to, the size of policy, premium payment pattern, dividend option, coverage riders, and policy loans.

In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right.

A. The base policy and any coverage riders are subject to the self-support and lapse-support tests for the combination to meet the requirements of the Model and the ASOP. Some actuaries would test riders independently while others would perform the tests in aggregate with the base policy forms to which they are attached. If a rider and the base policy can pass the tests independently, they would not appear to need to be tested in aggregate. However, if either the rider or the policy cannot pass the test independently, many actuaries would test them together. As with all policies that have flexible benefits, actuaries frequently consider the expected utilization of riders, as well as possible shifts in utilization. When testing the combination of a policy and a particular rider, these actuaries would often use experience assumptions reflecting the combined benefits. For example, the addition of a term rider may force more stringent underwriting and thus higher expenses and lower mortality. Actuaries often consider such possible interaction when determining assumptions to be used in testing.

While the ASOP specifically addresses coverage riders in the preparation of an illustration, it is silent with regard to non-coverage riders. Riders that have no cash values or benefits, or which merely grant administrative rights could be considered non-coverage riders. Many actuaries believe it is not necessary to test these riders that do not have a material cost. Policy split option riders, accelerated death benefit riders, and insurance-exchange riders may be examples of such riders.

M) SELF-SUPPORT AND LAPSE-SUPPORT TESTING

1) Q. With respect to the self-support and lapse-support tests, does the term accumulated cash flow mean asset share? Are reserves a part of this cash flow?

Pertinent Sections of the ASOP:

Section 3.5 ...At every illustrated point in time..., the accumulated value of all policy cash flows, when using experience assumptions underlying the disciplined current scale, should be equal to or greater than the illustrated policyholder value, i.e., the cash surrender values and any other illustrated benefit amounts available at the policyholder's election....

A. ASOP No.7 defines a “cash flow” as “any receipt, disbursement, or transfer of cash.” The ASOP appears to use the term “cash flow” consistently with ASOP No. 7. Increases and decreases in reserves thus do not appear to be defined as cash flows. Most actuaries consider an asset share to be the accumulation of cash flows. However, the assumptions used to determine the cash flows for an asset share may be different than those used for a self-support or lapse-support test, since guidance for compliance with the Model in choosing assumptions for the self-support and lapse-support test is provided by the ASOP. For example, the investment return used to calculate an asset share (which would often be based on the expected investment returns on accumulated assets) may not be equal to the investment return required for the self-support and lapse-support tests (which is an investment return factor based on recent actual investment experience). Lapse rate assumptions are another example. Asset share calculations may reflect a non-zero lapse rate whereas a zero lapse rate is prescribed by the Model and the ASOP for the lapse-support test.

Although reserves are not directly recognized in cash flows, they could impact some cash flow items, such as taxes.

2) Q. If it is company practice to distribute current investment earnings on surplus in the dividend scale annually, how can this be reflected in the self-support and lapse-support tests for new business and for in force business?

Pertinent Sections of the ASOP:

Section 3.5 ...The Model requires the following self-support test. At every illustrated point in time starting with the fifteenth policy anniversary (with the twentieth policy anniversary for second-or-later-to-die policies), the accumulated value of all policy cash flows, when using experience assumptions underlying the disciplined current scale, should be equal to or greater than the illustrated policyholder value....

Section 3.7 ...In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these

distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support....

Section 4.1.c,d ...The certification should disclose... any inconsistencies between the illustrated nonguaranteed elements for new and in-force policies and... the nonguaranteed elements amounts actually paid, credited or charged to the same or similar forms....

A. For in force policies Section 3.7 of the ASOP specifically permits distribution of accumulated surplus or prior gains, and hence distributions of investment income earnings on surplus, to be used in conducting the self-support and lapse-support tests provided the conditions stated are met. The income supporting such distribution is presumably allocated to policy form and by duration consistent with actual company practice in distributing the income in the dividend scale and considering the company's ability and intent to continue this practice for the foreseeable future.

The ASOP does not appear to describe any similar permission or exception to use earnings on surplus for new business self-support or lapse-support testing. The self-support test is defined in the Model to be the accumulation of the policy cash flows. Thus for new business, it may be acceptable to include such a distribution of investment income in the accumulated cash flows, but only to the extent the policy form would accumulate surplus, and thus investment income on surplus, under projections using the DCS and its underlying assumptions.

If the distributions of earnings on surplus that are included in the illustrated scale are not consistent with any distributions of surplus included in the payable scale, then the Model and ASOP require disclosure of the inconsistency.

While the subject of this question is dividends, the answer would be similar for other types of nonguaranteed elements if they reflect past earnings.

3) Q. For a bonus or other benefit conditional on qualification standards:

- 1. Are policyholders who make themselves ineligible in years one through five considered in the lapse-support test?**
- 2. What premium payment pattern should be assumed in performing the lapse-support test?**

Pertinent Section of the ASOP:

Section 3.6: ...The Model prohibits illustration of nonguaranteed elements in policies that are deemed to be lapse-supported and establishes an additional test to demonstrate compliance with this requirement. This additional test requires that the policy form in question be self-supporting under the same assumptions and with the same level of aggregation as described in section 3.5, changing only the persistency assumption. The modified persistency rate assumption will use the

persistence rates underlying the disciplined current scale for the first five policy years and 100% policy persistence thereafter. Where benefits are conditional upon policy continuation or certain premium payment patterns, the actuary should consider whether the lapse-support test assumes all policies in force at the end of year five and surviving to the date of such benefits will qualify for these benefits....

A. Section 3.5 of the ASOP requires that the actuary perform the self-support test reflecting the expected premium payment pattern of the policy form in question. Section 3.6 states that normally only the persistence assumption should be changed for the lapse-support illustration test. Section 3.6 also gives further direction to handle the lapse-support test in situations where benefits, such as a bonus, are conditional upon policy continuation or certain premium payment patterns. Under the ASOP, the actuary should consider whether the lapse-support test assumes all policies in force at the end of year five and surviving to (i.e., not dying before) the date of benefits qualify for the benefits. Assuming that the benefit would be paid even if conditions are not met would be seen by many actuaries as inappropriate. One way to overcome this problem may be to assume that all surviving policyholders meet the terms of the conditional benefits, for example, by assuming a premium payment pattern for all survivors that satisfies the benefit conditions. The product design will help determine if this assumption is reasonable and conservative. Alternatively, a lapse-support test could be constructed by assuming all policyholders who survive to the end of the fifth policy year qualify for the bonus even though they do not pay the required premium payment pattern or meet the conditions required for the bonus. Many actuaries would consider this a very conservative test of the non-lapse-support requirement, depending on the design of the conditional benefit.

To comply with Section 3.7, relating to certification of in force policies, many actuaries would use actual experience and actual paid scales of nonguaranteed elements from date of issue to the present. Note that actual experience may show that at the time of certification some policies no longer qualify for the contingent benefits and will never be able to become qualified in the future. Thus, these policies no longer contain the contingent benefit feature and the test need not be constructed so that they would qualify for the contingent benefit in the future.

If the policy has such conditional benefits, some actuaries believe it is appropriate, in addition to the tests discussed above, to also perform a lapse-support test using the self-support test expected premium payment pattern, substituting 100% persistence after the fifth policy year, and not constructing the test so that all policies in force at the end of year five and surviving to the date of benefits qualify for the benefits.

4) Q. What practices are utilized by actuaries to recognize “shifts in distribution towards any portions of the business that do not meet the self-support test in their own right,” as required by Section 3.5 of the ASOP?

Pertinent Section of the ASOP:

Section 3.5 ...In performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary’s professional judgment, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution towards any portions of the business that do not meet the self-support test in their own right.

A. If self-support tests are run on cells representing different combinations of underwriting classifications and policyholder choice factors, some cells may pass while others do not. When combining such cells to produce an aggregate test, it is usually necessary to make assumptions as to the distribution of business among classes. For a newly developed policy form, it is common practice to use assumptions based on experience of similar policy forms and judgment. However, if the cells are not equally self-supporting, the ASOP requires the actuary to assume a reasonable shift in distribution towards any portions of the business that are not self-supporting in their own right.

For self-support tests of an existing policy form, the actuary may look at actual underwriting classification distributions and actual distributions of policyholder choice factors. Again, if any cells were not self-supporting, the actuary should assess the credibility of assumptions based on actual data and determine the amount, if any, of additional shifting of business towards any portions of the business that are not self-supporting in their own right.

For the self-support tests of a closed block of business, most actuaries believe it is appropriate to assume there would be no shift in distribution of business. However, most actuaries would ensure that the distribution of the closed block accurately reflects the sales that were experienced as much as reasonably possible.

5) Q. The illustrated cash value must not be greater than the lesser of the DCS cash value and the currently payable scale cash value at any duration. Does this mean that each illustrated cash value must be compared to the DCS and the current scale at each duration? If the DCS or the current scale forces a lower illustrated value, must this lower value be used in the roll forward calculation of future illustrated cash values?

Pertinent Sections of Model:

Section 4.G Illustrated scale means a scale of nonguaranteed elements currently being illustrated that is not more favorable to the policyholder than the lesser of:

- (1) the disciplined current scale; or
- (2) the currently payable scale.

Section 4.F (2) Nonguaranteed elements means the premiums, benefits, values, credits or charges ... that are not guaranteed or not determined at issue.

Pertinent Section of the ASOP:

Section 3.3 ...The illustrated scale must not be more favorable to the policyholder than the currently payable scale at any duration. In addition, the illustrated scale must be no more favorable to the policyholder than the disciplined current scale at any duration.

A. To meet the requirements of the ASOP and the Model, most actuaries believe it is generally acceptable to determine each scale (i.e., illustrated, DCS, and current) independently and make the required comparisons at each duration. However, the actuary could develop an illustrated scale that is itself a DCS, so that a DCS comparison would then generally not be necessary. Similarly, the factors underlying the illustrated scale could be chosen so that the illustrated values are always less than or equal to the current scale as well as the DCS. In these cases, at the point of illustration, a duration-by-duration comparison would generally not be necessary.

The ASOP and the Model require that the illustrated value not be more favorable than the DCS and the current scale at each duration. Neither one explicitly addresses how the illustrated values are to be calculated. Thus, if the approach actually used requires a duration-by-duration comparison for each illustrated value, it would generally not be necessary to use the lower value (due to the comparison) in the roll forward calculation of future illustrated values.

6) Q. The self-support and lapse-support tests as defined in the Model and the ASOP require that, for all illustrated points in time, accumulated cash flows be no less than the total policyholder value available. If product pricing is normally done on a calendar-year basis, may these tests be done on a calendar-year basis or must a policy-year basis be used?

Pertinent Sections of the ASOP:

Section 3.5 ...The *Model* requires the following self-support test. At every illustrated point in time starting with the fifteenth policy anniversary (with the twentieth policy anniversary for second-or-later-to die policies), the accumulated value of all policy cash flows, when using experience assumptions underlying the disciplined current scale, should be equal to or greater than the illustrated policyholder value, i.e., the cash surrender values and any other illustrated benefit amounts available at the policyholder's election....

Section 3.6 ...This additional test requires that the policy form in question be self-supporting under the same assumptions and with the same level of

aggregation as described in section 3.5, changing only the persistency assumption....

A. According to the Model and the ASOP, the accumulated cash flows must not be less than total policyholder values at points shown in the illustration on or after the 15th anniversary.

Some actuaries believe this indicates that policy-year cash flows may need to be used if policy-year values are illustrated.

However, the actuary may be able to demonstrate that the illustration passes the self-support and lapse-support tests using calendar-year cash flows in the calculation. This might require an analysis of how calendar-year values relate to values at “illustrated points in time.” As required by Section 4.3 of the ASOP, the description of and the rationale for the assumptions should be documented.

7) Q. In the lapse-support test of a flexible premium universal life product, does the Model allow policies to terminate after the fifth policy year due to an insufficiency of premium payments?

Pertinent Sections of the ASOP:

Section 3.4.1(c) Persistency - The actuary should base the premium continuation and policy persistency rates on the insurer’s actual experience, if credible, for this or similar policy forms....

Section 3.6 ...The Model prohibits illustration of nonguaranteed elements in policies that are deemed to be lapse-supported and establishes an additional test to demonstrate compliance with this requirement. This additional test requires that the policy form in question be self-supporting under the same assumptions and with the same level of aggregation as described in Section 3.5 [Requirement for Self-Support], changing only the persistency assumption. The modified persistency rate assumption will use persistency rates underlying the disciplined current scale for the first five policy years and 100% policy persistency thereafter. Where benefits are conditional upon policy continuation or certain premium payment patterns, the actuary should consider whether the lapse-support test assumes all policies in force at the end of year five and surviving to the date of such benefits will qualify for these benefits....

A. Section 3.4.1 of the ASOP distinguishes two forms of persistency in flexible premium products: premium continuation and policy persistency.

With respect to conducting the lapse-support test on flexible premium policy forms, Section 3.6 of the ASOP provides that the policy persistency assumption is to be set to 100% in all policy years after the fifth. The ASOP does not appear to give direction to the actuary in choosing a premium continuation assumption after the fifth year and the requirement of “changing only the persistency assumption” might be viewed by some actuaries as requiring that the premium continuation assumption be the same as that used in the self-support test. If the premium continuation assumption (premium pattern and amount) results in some policies (that are in force at the end of five years and survive) not

qualifying for conditional benefits or terminating after the fifth year due to lack of funding, some actuaries believe the ASOP requires an additional change in the premium continuation assumption. The actuary should consider whether benefits (including death benefits) that are conditional upon policy continuation or certain premium payment patterns are assumed to be provided to all policies in force at the end of year five and which survive to the date of such benefits.

Some actuaries would interpret the ASOP as allowing for a premium continuation assumption that could result in policy termination or other benefit cessation, as long as the actuary considers the impact and likelihood of this assumption. Considerations that might influence the actuary in deciding whether the premium continuation assumption should be modified are the materiality of this assumption and reasonableness of the level of the premium payments required to continue these benefits for all policies. For example, some Universal Life with Secondary Guarantee products require a large catch-up premium to extend the secondary guarantee to maturity. It might not be realistic, or even feasible, to assume that this premium is paid on all policies.

Assuming the death benefit would be paid even if premium payment conditions are not met would be seen by many actuaries as inappropriate. There would seem to be several approaches that actuaries may choose to overcome this problem.

Since the Model and the ASOP mandate a 100% policy persistency rate assumption following the fifth policy year, some actuaries may choose to use a 100% premium continuation assumption after the fifth policy year. However, a 100% premium continuation assumption could still result in policy termination if the level of premium being paid is insufficient to keep the policy in force until all benefits are paid. Therefore, the actuary should consider whether allowing policies to terminate due to insufficient funding is consistent with the ASOP.

Some actuaries may believe the premium continuation should be the same as that used in the self-support test for as long as fund mechanics keep the policy in force.

If the policy funds become insufficient and the actuary determines that this assumption is inappropriate, there appear to be at least two choices to keep the policy from terminating:

1. Using the illustrated scale under consideration, solve for the level premium payable from the initially projected termination date to the end of the contract which will keep the policy from terminating, or,
2. Beginning on the date of the projected termination, assume just enough premium is paid to keep the policy from termination prior to the next premium due date. This will likely result in an increasing premium pattern.

Other actuaries may devise additional methodologies that keep the policy in force. For in force testing done after the fifth policy year, most actuaries would reflect actual historical persistency experience up to the current date and 100% policy persistency thereafter.

Section 3.10 of the ASOP describes documentation requirements; the actuary should document the rationale for the methodology used.

8) Q. An illustration certification needs to be filed when a new policy form is filed, but if pricing has not been completed at the time of filing, can the illustration actuary sign the certification based on preliminary illustrative values at the time of filing?

Pertinent Sections of the ASOP:

Section 4.1 Prescribed Statement of Actuarial Opinion – The *Model* requires the illustration actuary to certify annually that the illustrated scale and the disciplined current scale are in compliance both with the requirements as set forth in the *Model* and with the requirements set forth in this ASOP. Certifications should also be made for newly introduced forms before a new policy form is illustrated....

As required by the *Model*, if an illustration actuary is unable to certify the illustrated scale for any policy form the insurer intends to use, the actuary should notify the board of directors of the insurer and the commissioner promptly of his or her inability to certify.

A. To support a certification at the time the new policy form is filed, when pricing has not been completed, many actuaries would develop a preliminary DCS for the new policy form. If the preliminary DCS is later revised between the filing date and the date the product is first offered for sale, new self-support and lapse-support testing would be performed. An additional new product certification would not be filed.

If pricing still has not been completed at the time of a subsequent annual certification and the new policy form is included in that certification, that certification could also be based on a preliminary DCS.

Instead of developing a preliminary DCS, as described above, some actuaries file a certification using prospective wording, certifying that the illustrated scale will meet the requirements of a DCS. This approach could be used as long as non-prospective language is not a specific regulatory requirement. After pricing is completed, self-support and lapse-support testing would then be performed before the new product is illustrated to ensure that the illustrated scale meets the requirements of a DCS. An additional new product certification would not be filed.

As required by the *Model* (Section 11E), if the illustration actuary is unable to certify the scale for any policy form illustration the insurer intends to use, the actuary is required to notify the board of directors of the insurer and the commissioner promptly of his or her inability to certify.

N) *POLICY LOANS*

1) Q. Should the policy cash flows used for the self-support and lapse-support tests include policy loans, loan interest and loan repayments?

Pertinent Sections of the ASOP:

Section 3.5 ...Policyholder choices reflected in the preparation of an illustration include, but are not limited to, the size of the policy, premium payment patterns, dividend option, coverage riders and policy loans.

In performing the self-supporting test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment, such combination would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on actual experience, if available, recognizing possible shifts in distribution toward any portions of the business that do not meet the self-supporting test in their own right....

A. Section 3.5 of the ASOP lists policy loans as an example of a policyholder choice factor that should be considered when performing the self-support and lapse-support tests. ASOP No. 7 defines cash flow as "...any receipt or disbursement of cash." Thus, cash policy loans, repayments and the cash payment of loan interest would all appear to be examples of items that would be included in policy cash flows. Capitalization of loan interest and premium loans would generally not appear to be examples of policy cash flow (although the occurrence of these activities may ultimately affect cash flow by affecting cash values or cash premium receipts).

Section 3.5 goes on to say that the actuary may test policyholder choice factors in the aggregate, assuming a distribution among classes based on actual experience available, and recognizing shifts in distribution that may occur toward non-self-supporting cells. With policy loans, many actuaries will consider whether the use of these options could cause an illustration to fail a test. For example, if policy loan options provide an earnings spread that is greater than the one that would be provided by the DCS earned interest factor, many actuaries would conclude that policy loan cells could be ignored for the purpose of the aggregate tests. Low volumes of policy loan activity would also be a consideration if the policy fails the test in the absence of loans.

On the other hand, some contracts provide, for example, a "zero-cost loan" (i.e., one that provides no spread between the loan rate and the credited rate). If actual experience shows the volume of such loans to be material or that high utilization is expected in the future, many actuaries would make sure the cost of these loans is reflected in the aggregate tests given the possibility that these costs may cause the policy form to fail the tests.

If the actuary determines to reflect loan activity, the actuary may do so by directly modeling test cells with explicit assumptions for policy loan patterns and repayments. But there may be other simplifying approaches that the actuary could take. For example, the actuary could reduce or increase the earned interest rate factor, to reflect an assumed portion of the assets that earn policy loan interest rates rather than reflecting policy loans directly. Any impact of policy loan utilization on dividends or interest credited to the policies could be similarly reflected. Actuaries may develop other simplifying approaches as well.

2) Q. How are variable interest rate loans reflected in the lapse-support and self-support tests?

Pertinent Sections of the ASOP:

Section 3.4.1 (a) The investment return factors underlying the disciplined current scale should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block. For an indexed life insurance product, where the investment assumption is sensitive to business or economic cycles, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience....

A. Some insurance policies have loan provisions that either charge interest or credit interest at a variable rate. For example, a policy may charge interest based on Moody's corporate bond yield average and credit fixed interest, or in the case of some indexed UL policies, interest may be charged at a fixed rate and credited at a rate tied to index performance. Under each of these product designs it may be possible for this loan interest spread to be negative.

Section 3.4.1(a) of the ASOP, in discussing the investment return assumption, states the actuary should reflect the insurer's actual practice for nonguaranteed elements with respect to policy loans.

Most actuaries develop the assumptions underlying the variable component of the loan provision in a consistent manner with the assumptions underlying the non-loaned portion of the policy.

In determining the variable component of the loan interest spread, the actuary may wish to consider whether this is sensitive to business or economic cycles. Section 3.4.1.(a) of the ASOP also states "[f]or an indexed life insurance product where the investment assumption is sensitive to business or economic cycles, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actuarial experience."

To the extent that historical loan utilization experience is available, many actuaries would consider whether this experience reflects sensitivity to business or economic cycles in determining its credibility for use in lapse-support and self-support testing.

O) TWO-TIERED PRODUCTS

1) Q. Suppose a company sells a two-tier life product, e.g., a product that offers a higher cash earned value if, upon lapse, the policyholder receives that amount in periodic payments. How are the self-support and lapse-support tests applied to these illustrated benefits?

Pertinent Sections of the ASOP

Section 3.5 ...The *Model* requires the following self-support test. At every illustrated point in time starting with the fifteenth policy anniversary (with the twentieth policy anniversary for second-or-later-to-die policies), the accumulated value of all policy cash flows, when using experience assumptions underlying the disciplined current scale, should be equal to or greater than the illustrated policyholder value, i.e., the cash surrender values and any other illustrated benefit amounts available at the policyholder's election. Where policies expire according to their terms prior to 15 years (20 years for second-or-later-to-die policies), the illustrated scale should be self-supporting at the point of expiration....

A. Some actuaries might reflect this “dual election” situation in one model, which may be complex to build. Other actuaries might use two separate models. One model would assume 100% of eligible persisting policyholders elect illustrated annuity benefits at each successive duration. The second model would assume 100% of the persisting policyholders elect the cash surrender values at each successive duration. If the policy form passes the tests in both models, the actuary could be satisfied that the policy form would pass the tests under any combination of the two available benefit elections.

If the higher cash earned value, used to calculate the periodic payments, is actually featured in the illustration, some actuaries may compare the accumulated cash flows to that higher cash earned value for those policyholders assumed to elect the illustrated annuity benefits. These actuaries might base this decision on Section 3.5 of the ASOP which defines policyholder value as “the cash surrender values and any other *illustrated* benefit amounts available at the policyholder's election.”

Other actuaries may choose to compare the accumulated cash flows to the “value” of the illustrated annuity benefits. Several techniques may be used to calculate this value for those policyholders electing the benefit at any single duration.

Some actuaries may use a Present Value Method. They would calculate the present value of future periodic payments the policyholder would receive, including related expenses. This present value calculation relies upon the Model's requirement to discount based on the factors underlying the DCS. If the accumulated cash flow is larger than this present value, the illustrated benefits could be considered to pass the tests for elections made at that duration. Other durations would be tested in a similar fashion.

Other actuaries may use the Full Cash Flow Method. This method projects the accumulation of the cash flows as the illustrated benefits and expected expenses are

subtracted. At the end of the projection period, if the accumulated cash flow is positive, the tests generally are passed for the elections made at that duration. Other durations would be tested in a similar fashion.

Still other actuaries might simply compare the accumulated cash flows to the reserves, account value or similar values that they determine represent the present value of future benefits. In applying this method, the actuary may want to consider that the illustrated benefits (the periodic payments) are required by the Model to be supportable by the factors underlying the DCS.

Since the factors underlying the DCS are used for both methods, the Full Cash Flow Method usually is actuarially equivalent to the Present Value Method. The Full Cash Flow Method typically provides additional information about the incidence of benefits on a year-by-year basis.

P) IN FORCE POLICIES

1) Q. Your company offers a guaranteed cost term rider that may be issued with a traditional whole life policy. The riders and base policies passed the self-support and lapse-support tests before they were illustrated and issued. Since then, experience has changed. Changes have been made to the currently payable scale for the base policy that are reasonably consistent with the changes in experience assumptions underlying the DCS. However, since the rider is fully guaranteed, no changes have been made to the rider premiums or benefits to reflect changes in experience since issue. Would retesting be required or could the illustration actuary certify that the scale illustrated for these in force policies with riders was in compliance based on ASOP 24 Section 3.7b?

Pertinent Section of ASOP:

Section 3.7 Illustrations on Policies In Force One Year or More – The illustration actuary is required to annually certify that the disciplined current scale, for both new business and in force illustrations, complies with the *Model* and this standard. The *Model* requires that the illustrated scale be no more favorable to the policyholder than the lesser of the currently payable scale and the disciplined current scale. The disciplined current scale, for a policy in force one year or more, continues to be in compliance with the *Model* and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder, or
- b. the currently payable scale has been changed since the development of the disciplined current scale more recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale, or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) above is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form....

A. In this situation, many actuaries would consider the base policy in force illustrated scale to be in compliance because changes in the current payable scale were reasonably consistent with changes in experience assumptions underlying the DCS. If adverse experience on the rider cannot affect nonguaranteed elements on the base policy, due to state regulation, policy form language, or written company practice, many actuaries may conclude that, for in force illustrations, the rider that has no nonguaranteed elements would not need to be retested. However, in situations where experience on the rider can

affect the base policy nonguaranteed elements (for example, some dividend formulas have an element that reflects experience from riders), it may be appropriate to retest both the rider and the base policy.

When it is appropriate to retest both the rider and the base policy many actuaries consider whether the policy form passed the self-support and lapse-support tests for the base plan and rider in aggregate or whether the base plan and rider passed the tests on a stand alone basis. If the testing was performed in aggregate, the actuary may want to consider performing the self-support and lapse-support tests using the new scale and revised experience assumptions. The revised testing could be performed in aggregate for the base policy and rider or on a stand alone basis.

2) Q. Which GRET applies to in force illustrations?

Pertinent Sections of the ASOP:

Section 3.7 ...If none of the conditions in (a), (b), or (c) above is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A. The ASOP provides that if the conditions in paragraphs (a), (b) and (c) of Section 3.7 are met, the actuary is not required to retest in force policy forms that are being illustrated. If, however, the conditions are not met, the ASOP calls for the affected policy forms to be retested before the actuary can certify the DCS. Many actuaries would ensure that the illustrated scale meets the self-support and lapse-support tests using actual experience and the actual paid scale of nonguaranteed elements from the date of issue to the present and a scale not greater than the DCS from the present forward. For such purposes, the GRET in effect at the time of certification usually applies for the projection of future expenses used for in force illustrations.

There are several approaches that actuaries believe would be acceptable for determining historical expenses. One approach would be for historical expenses to be based on the expense assumptions used in prior certifications. So, for example, if a company had used GRET, marginal, and fully allocated expenses in each of the last three years, and is using GRET expenses in the current certification, the actuary could use the same expense assumptions used in each of the prior certifications, updated for actual experience in those years if materially different from what was assumed. In the year GRET was assumed, the GRET factors applicable in that year would be used under this approach. Alternatively, actual fully allocated assumptions could be used for historical expenses,

regardless of the actual expense assumptions used in those years. If an in force policy form is unable to pass the self-support and/or lapse-support tests because of the expense assumption, it does not necessarily mean that the nonguaranteed elements for that policy form cannot be illustrated. Rather, many illustration actuaries would apply Section 3.7 of the ASOP which says that, subject to certain conditions, distributions of accumulated surplus or prior gains to an in force policy block are available and under those circumstances can be used in the self-support and lapse-support tests.

3) Q. If a company buys a block of in force policies that have been declared to be illustrated and takes over administration of the policies, how does the actuary select assumptions and set the DCS if the actuary doesn't have access to the experience studies from the prior company?

Pertinent Sections of the ASOP:

Section 3.4.1 ...To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale. When such suitable data are lacking, experience factors should be derived in a reasonable and appropriate manner from actual experience of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference....

Section 3.7 ...The disciplined current scale, for a policy in force one year or more, continues to be in compliance with the *Model* and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder; or
- b. the currently payable scale has been changed since the development of the disciplined current scale most recently certified only to the extent that changes are reasonably consistent with the changes in experience assumptions underlying the disciplined current scale, or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a) (b), or (c) above is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form....

A. This situation brings up two issues for the acquired block of business: developing experience assumptions, and the status of the DCS. Many actuaries would first make an effort to collect credible recent historical experience from the prior company. However, if no such studies can be retrieved or developed, the actuary may choose to rely on the experience of other similar classes of business, of other companies, or from other sources. Many actuaries would collect industry experience if available from similar companies or companies operating in similar classes of business to develop a set of experience factors

for the newly acquired policies. The experience assumptions documented in files of the previous actuary or company may also be a useful reference. As required by Section 3.10 of the ASOP, the actuary should have documented the description of and rationale for the experience assumptions underlying the DCS.

The actuary generally would then determine if the conditions in Section 3.7 a or b are met by determining if any changes in the currently payable scale are reasonably consistent with the changes in the experience assumptions underlying the DCS. If the circumstances outlined in Section 3.7 (a), (b) or (c) are not met, the actuary should review the DCS, and if warranted develop a new DCS.

4) Q. Suppose the company sells a participating product with a DCS dividend scale of \$1.00 per \$1,000 for all years. New illustrations show \$1.00 per \$1,000. For the first five years, the actual paid scale is \$1.25. The additional \$.25 is a distribution of accumulated surplus. The company represents that it has the intent and ability to continue to pay the \$.25, so it is illustrating \$1.25 on in force illustrations. Now the company increases the paid scale to \$1.50. The \$.50 is also a distribution of accumulated surplus. During the entire period, there have been no changes in the experience underlying the DCS. Does the company now illustrate \$1.50 on in force illustrations? Since the currently paid scale is increased, how does the illustration actuary typically certify that this illustrated scale is in compliance? How do illustration actuaries usually determine “the intent and ability to continue to pay”?

Pertinent Sections of ASOP:

Section 3.7 Illustrations on Policies In Force One Year or More – The illustration actuary is required to annually certify that the disciplined current scale, for both new business and in force illustrations, complies with the *Model* and this standard. The *Model* requires that the illustrated scale be no more favorable to the policyholder than the lesser of the currently payable scale and the disciplined current scale. The disciplined current scale, for a policy in force one year or more, continues to be in compliance with the *Model* and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder, or
- b. the currently payable scale has been changed since the development of the disciplined current scale more recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale, or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) above is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A. Under the scenario described, some actuaries may conclude that an illustrated scale of \$1.50 on in force illustrations would be in compliance. For new sales, unless the actuary was able to certify a more favorable DCS, illustrations would generally be limited to the original DCS of \$1.00.

In certifying compliance of the \$1.50 scale for in force illustrations, the actuary would generally *not* be able to rely on the testing exemptions outlined in Section 3.7, since the currently paid scale was increased without a commensurate increase in the assumptions underlying the DCS. So in this case, the actuary may generally want to determine that the scale satisfies the lapse-support and self-support tests. However, Section 3.7 of the ASOP does allow payments of accumulated surplus or prior gains to be included in an illustrated scale under the circumstances described (i.e., the distributions are actually being paid and the company has the intent and ability to continue to do so). It also allows for such distributions to be used in conducting self-support and lapse-support tests. So, for the purpose of testing the DCS for the in force scale, this appears to effectively allows the actuary to offset the payments in excess of the original \$1.00 DCS in determining the historical policy cash flows (since it can be assumed that there was a distribution of accumulated surplus exactly offsetting each excess payment). Since there were no changes in the experience underlying the original DCS, it may be concluded that the \$1.00 scale is still a DCS. It then follows in this example that an in force illustration of \$1.50 would be in compliance.

Per the ASOP, the acceptability of using accumulated surplus or prior gains in in-force illustrations is dependent upon the company's "intent and ability" to continue to pay such amounts. However, the ASOP is silent with respect to how the actuary determines a company's intent and ability. Without such guidance, the actuary would generally use professional judgment to make such a determination. The actuary would generally want to document how "intent and ability" was determined and to be prepared to support such findings.

Finally, the actuary is required in Section 4.1(c) to disclose in the annual certification the differences between illustrated nonguaranteed elements for new policies and those for similar in force policies.

5) Q. Suppose a policy form passed the self-support and lapse-support tests at issue and was sold with a compliant illustration. If the original scale no longer passes the self-support and lapse-support tests, what scale would the actuary generally use for this in force illustration?

Pertinent Sections of the ASOP:

Section 3.7 ...The Illustration actuary is required to annually certify that the disciplined current scale, for both new business and in force illustrations, complies with the *Model* and this standard. The Model requires that the illustrated scale be no more favorable to the policyholder than the lesser of the current payable scale and the disciplined current scale. The disciplined current scale, for a policy in force one year or more, continues to be in compliance with the Model and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder; or
- b. the currently payable scale has been changed since the development of the disciplined current scale most recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale; or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the current experience would dictate.

If none of the conditions in a, b or c above is met, the illustration actuary should (1) review the experience factors underlying disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form....

A. Section 10C of the Model says that in force illustrations requested by the policyholder shall comply with the requirements of Section 6B. Section 6B requires that illustrations satisfy the self-support and lapse-support tests. Also, Section 3.3 of the ASOP says that the illustrated scale must not be more favorable than the currently payable scale at any duration, and in addition, the illustrated scale must not be more favorable than the DCS at any duration. Section 3.7 of the ASOP describes the rules that apply to in force illustrations.

If it is determined that the original DCS would no longer satisfy the self-support and lapse-support tests, many actuaries would first attempt to apply the conditions of (a), (b) or (c) of Section 3.7 of the ASOP. and adjust the illustrated scale in a manner consistent with the changes in experience assumption underlying the DCS. If the currently payable scale does not satisfy these conditions the ASOP states a revised DCS should be determined. . This revised DCS may result in an illustrated scale lower than both the original illustrated scale and the currently payable scale. Note that this result may cause inconsistencies that should be reported in the illustration actuary's certification per Section 4.1.c and 4.1.d.

6) Q. If the actual distribution of business among underwriting classes or the actual distribution of policyholder choices is different from the distribution assumed at the time of the prior certification how might an actuary take this into account when certifying an in force scale?

Pertinent Sections of the ASOP:

Section 3.7 ...The disciplined current scale, for a policy in force for one year or more, continues to be in compliance with the Model and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder; or
- b. the currently payable scale has been changed since the development of the disciplined current scale most recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale; or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A. In certifying illustrated scales of nonguaranteed elements for in force policies, the actuary usually considers whether changes in experience would warrant changes to the DCS. Many actuaries would consider the effects of the various different experience factors together rather than consider the effects of a particular experience factor in isolation. If changes in distribution among various underwriting classes and policyholder choice factors together with other experience changes would make the DCS significantly less favorable to the policyholder, then the actuary may need to calculate a new DCS reflecting the updated experience in order to certify that the illustrated scale continues to meet the requirements of the Model and the ASOP.

The actuary also generally takes into account whether the currently payable scale has changed since the prior certification. If changes in the currently payable scale are reasonably consistent with changes in the experience (including distribution changes) underlying the DCS, or if changes in the currently payable scale are less favorable to the

policyholder than the changes in experience would necessitate, then many actuaries would certify the illustrated scale without recalculating the DCS to reflect updated experience.

7) Q. With regard to policies in force one year or more, how will illustration actuaries decide when they need to develop a new DCS and test whether an illustrated scale meets the self-support and lapse-support tests?

Pertinent Sections of the ASOP:

Section 3.7 ...The disciplined current scale, for a policy in force for one year or more, continues to be in compliance with the Model and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder; or
- b. the currently payable scale has been changed since the development of the disciplined current scale most recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale; or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A: Section 3.7 of the ASOP stipulates conditions whereby the illustration actuary can certify compliance without having to re-perform the self-support and lapse-support tests. To meet these conditions, the illustration actuary compares changes in the currently payable scale since the last certification to changes in the experience assumptions underlying the DCS since the last certification. Generally, so long as any change to the currently payable scale is not relatively more favorable to the policyholder than the change in the experience underlying the DCS, the illustration actuary may certify compliance without performing the tests. However, the ASOP does not specifically address how these comparisons should be made in practice.

These comparisons are fairly straightforward in the simple case where it's the company's practice to have the DCS, the currently payable scale, and the illustrated scales all equal. In these situations, many actuaries would satisfy themselves that any change to the illustrated scale was not more favorable to the policyholder than the change underlying the DCS experience. For example, if the underlying DCS earned interest factor decreased by 50 basis points, then many actuaries would apply ASOP Section 3.7 provided the interest rate factor used in the illustrated scale was also reduced by 50 basis points or more.

Changes in the currently payable scale are often determined by developing new factors that are directly used in formulae to generate the new currently payable scale. For example, a new interest rate factor may be plugged into the dividend formula for a participating policy or into the account value calculation for a universal life policy. In applying ASOP Section 3.7, the illustration actuary may be able to make a direct comparison of these underlying factor changes with the corresponding changes to the experience underlying the DCS, just as described above in the simple case.

In other cases, the changes to the underlying factors may not be as easily compared. Changes may affect multiple factors in different ways so that conclusions cannot be drawn from a comparison of individual factors or currently payable scale factors may not correspond directly to the DCS experience factors. For example, a change to the premiums in an indeterminate premium plan may reflect a blend of underlying assumption changes or a universal life account value formula may reflect underlying expenses in the cost of insurance charge instead of in an explicit expense factor. In these cases, many actuaries would use other methods to determine whether the changes were reasonably consistent. The actuary may be able to compare the assumptions that underlie the change in the currently payable scale to those underlying the DCS, even though those assumptions do not directly enter into the currently payable scale formula, e.g., the underlying assumptions could be those used to empirically arrive at the currently payable scale in a profit study or cash flow test). Another approach would be to generate a new DCS based on the new underlying factors and compare changes to the DCS to the changes in the currently payable scale. Still another approach would be to develop a hypothetical currently payable scale based on the new assumptions underlying the DCS and compare this hypothetical scale to the actual currently payable scale.

In these more complex cases, once ASOP Section 3.7 (a), (b), or (c) is satisfied, the actuary may determine how the illustrated scale is to be changed. While the self-support and lapse-support tests do not have to be performed, under the Model the illustrated scale must still not be more favorable than the lesser of the DCS and the currently payable scale. To ensure this, many actuaries would modify the current DCS to consistently reflect the changes in the underlying DCS assumptions and make the required illustrated scale comparison using the new currently payable scale and the revised DCS. Alternatively, the actuary may be able to conclude that the illustrated scale itself will satisfy the required relationships to the currently payable scale and the DCS by making consistent changes to the factors underlying the illustrated scale.

Finally, some actuaries position themselves to avoid or delay additional testing on in force blocks by designing the original DCS on a more conservative basis. For example,

the DCS may be based on a 7% earned interest rate, even though recent experience would call for an 8% rate. In this case, ASOP Section 3.7 could be applied so long as the interest spread was greater than or equal to the original spread, using the 7% earned rate.

8) Q. For in force illustrations, once it is determined that the self-support and lapse-support tests must be reperformed, how is actual past experience to date to be reflected?

Pertinent Section of the Model:

Section 4.d “Disciplined current scale” means a scale of non-guaranteed elements constituting a limit on illustrations currently being illustrated by an insurer that is reasonably based on actual recent historical experience, as certified annually by an illustration actuary designated by the insurer. Further guidance in determining the disciplined current scale as contained in standards established by the Actuarial Standards Board may be relied upon if the standards:

- (1) Are consistent with all provisions of this regulation;
- (2) Limit a disciplined current scale to reflect only actions that have already been taken or events that have already occurred;
- (3) Do not permit a disciplined current scale to include any projected trends of improvements in experience or any assumed improvements in experience beyond the illustration date; and
- (4) Do not permit assumed expenses to be less than minimum assumed expenses.

Pertinent Sections of the ASOP:

Section 3.7 ...The disciplined current scale, for a policy in force for one year or more, continues to be in compliance with the Model and this standard, if any of the following apply:

- a. the currently payable scale has not been changed since the last certification and the illustration actuary determines that experience since the last certification does not warrant changes in the disciplined current scale that would make it significantly less favorable to the policyholder; or
- b. the currently payable scale has been changed since the development of the disciplined current scale most recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the disciplined current scale; or
- c. the currently payable scale has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) is met, the illustration actuary should (1) review the experience factors underlying the disciplined current scale and revise as necessary, and (2) develop a new disciplined current scale for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A. In practice, many companies will attempt to maintain currently payable scales consistent with changes in the underlying DCS in order to satisfy the conditions set forth in Section 3.7 (a), (b), or (c) of the ASOP. This may be difficult for assumptions such as the distribution of business, persistency, and expenses. If testing is required, most actuaries would reflect past actual experience and actual paid scales of nonguaranteed elements from the date of issue for the policy form being tested. If appropriate, the accumulated cash flows so generated may be supplemented by accumulated surplus or prior gains in order to project future accumulated cash flows in conducting the self-support and lapse-support tests using the DCS.

The ASOP allows for the aggregation of various assumptions for the purpose of performing the self-support and lapse-support tests. An in force block of policies may represent a wide range of issue years with varying sales mixes, experience, policyholder choice factors and other factors. The actuary may need to make various aggregation assumptions in order to reasonably model and re-test an in force block of business.

Actual past experience may be reflected in various ways. One way used by some actuaries would be to maintain a history of the experience factors underlying the DCS, as well as the historical paid nonguaranteed elements, to generate a historical cash flow model. Other actuaries may maintain an ongoing historical policyholder surplus account (e.g., participating policyholder surplus accounts used for determining dividends) that could be nominally segregated by the appropriate in force policy blocks so that the current account balance represents the accumulated value of past experience. This balance, along with any other assets supporting the block, could be used as the beginning point for accumulated cash flows that, along with the DCS, is used to project future accumulated cash flows.

9) Q. In performing in force illustration testing, how should an actuary incorporate distributions of accumulated surplus or prior gains?

Pertinent Sections of the ASOP:

Section 3.7 Illustration of Policies In Force One Year or More – ...In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the disciplined current scale and in the illustrated scale, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the

foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

A. If the company has explicitly allocated an amount of accumulated surplus or prior gains to be distributed, such as in the situation of a closed block, many actuaries would include those distributions directly in the testing. In such case, the distributed amount would be reflected in the testing as an addition to the accumulated policyholder cash flows as of the date of the distribution. These distributions could be included only in prior years, or included in future years if there is intent and ability to continue to do so for the foreseeable future.

If the company explicitly determines the distributions of accumulated surplus or prior gains through a formula that modifies a nonguaranteed element, many actuaries would include those distributions directly in the testing. For example, if gains on supplemental benefits or dividends left to accumulate are currently being paid to policyholders through an increase to the dividend interest rate, those distributions could be included in the tests for self-support and lapse-support. If the company has the intent and ability to continue these distributions, the tests could include these distributions on both a retrospective and prospective basis. In such situation, some actuaries would construct the self-support test by using the actual paid scale of nonguaranteed elements from the date of issue to the present, and a scale not greater than the disciplined current scale from the present forward, and include for each of those years (past and future) an offsetting item equal to the amount of surplus explicitly distributed through the formula.

There are situations where an actuary may decide to assume historical implicit distributions of accumulated surplus or prior gains. For example:

1. Where previous payments of nonguaranteed elements were in excess of the disciplined current scale. Here, implicit distributions would be particularly appropriate if the company's current practice is to pay amounts in excess of the disciplined current scale, but the company has not made any explicit distributions of surplus.
2. Where actual experience has been less favorable than previously anticipated and the payable scale has not changed.

In such situations, most actuaries would want clear, documented intent from the company that it does not intend to recoup such excess paid amounts or less favorable experience in the future. Also, most actuaries believe such assumed distributions would only be assumed retrospectively unless the actuary can document that the company has the intent and ability to continue such practice for the foreseeable future. In constructing the self-support test, some actuaries would use the previously anticipated experience factors, actual policies sold, and actual paid scale of nonguaranteed elements from the date of issue to the present, and then assume for each of those years an offsetting amount equal to the excess paid amounts or the differences between the experience factors.

Q) REINSURANCE

1) Q. How are reinsurance arrangements treated in developing a DCS and performing the self-support and lapse-support tests?

Pertinent Sections of the Model:

Section 6B When using an illustration in the sale of a life insurance policy, an insurer or its producers or other authorized representatives shall not ... (9) ... use an illustration that is "lapse-supported"; or (10) Use an illustration that is not "self-supporting."

Section 11A The board of directors of each insurer shall appoint one or more illustration actuaries.

Section 11B The illustration actuary shall certify ... that the illustrated scales ... meet the requirements of this regulation.

Pertinent Sections of ASOP:

Section 4.1 The Model requires the illustration actuary to certify annually that the illustrated scale and the disciplined current scale are in compliance both with the requirements as set forth in the Model and with the requirements as set forth in this ASOP....

Section 3.4.1 The actuary should use experience as analyzed within the insurer's nonguaranteed element framework when setting experience factors underlying the disciplined current scale. To the extent actual experience is determinable, available, and credible, the actuary should use actual experience when setting experience factors underlying the disciplined current scale....

Section 3.8e Reinsurance Agreements – New or revised reinsurance agreements may impact experience assumptions such as mortality, investment income, and tax.

A. Many different types of reinsurance arrangements exist in the marketplace today, including the following:

1. Reinsurance arrangements where the reinsurer acquires a significant portion of the direct insurance issued for one or more policy forms. These arrangements can be made for a large percentage of the insurance, typically 50% to 100% of the business, on an automatic basis, and the ceding company may be dependent on the reinsurer for some of the pricing assumptions underlying the business. The arrangements can be structured with expense allowances that are not directly related to the ceding company's direct expenses. Reinsurance charges may be guaranteed or nonguaranteed.
2. Reinsurance arrangements can be structured where individual cases are ceded to a reinsurer at lower net cost than the cost the ceding insurer would have on the business and where it is financially advantageous for the ceding company to reinsure the case.

3. Arrangements, which may or may not be classified as reinsurance, where the "ceding company" directly issues the product of the "reinsurer," using the ceding company's policy form(s). In these cases, it is possible that the reinsurer may directly be responsible for the pricing, administration, and valuation of the business and the ceding company does not participate at all in the business.

These types of arrangements (and others) may present the illustration actuary with problems with respect to the Model and the ASOP in that the cash flows are dependent on the assumptions the reinsurer uses to price the business.

Several issues can be discussed with respect to reinsurance, including the following:

1. Who may appropriately serve as illustration actuary for a policy form when reinsurance makes the policy cash flows dependent on reinsurance experience to a large extent?
2. Are cash flows related to a reinsurance arrangement "assumptions underlying the insurer's DCS?"
3. How are reinsurance cash flows and the reinsurance arrangement taken into account in performing the self-support and lapse-support tests?

The actuary may apply the general principles of the Model and ASOP in reflecting the impact of reinsurance. The Model requires that the illustrated scale of each illustrated policy form meet the requirements of the Model, and that the company board of directors appoint an illustration actuary to certify to that effect. This is required regardless of any reinsurance arrangement. Neither the Model nor the ASOP requires that the illustration actuary be an employee of the direct writing company, and it is possible that the company might appoint an illustration actuary who is a consultant or an employee of the reinsurance company, subject to the conflict of interest provisions (Precept 7) of the Code of Professional Conduct published by the Academy and adopted by the five U.S.-based actuarial organizations. The terms and responsibilities of the reinsurance arrangement may serve as a guide to the board in appointing an illustration actuary for the policy form.

For some reinsurance arrangements, the terms of the treaty may also provide insight into structuring the cash flows for the self-support and lapse-support tests. The reinsurance arrangement may provide guarantees regarding the nature of cash flows between the ceding company and the reinsurer. In this case, many actuaries would agree that cash flows specified by the reinsurance arrangement may reasonably be included in the self-support and lapse-support tests. If cash flows are not guaranteed, it usually will be necessary for the illustration actuary to exercise judgment to determine the use of reinsurance cash flows in the tests. Many actuaries would use such cash flows if they could convince themselves (for example, by examining the language of the agreement and the reinsurer's past history with respect to similar arrangements) that the reinsurance cash flows represent best estimates of future cash flows under the constraints set forth by the Model and the ASOP (e.g., no projection of mortality improvement). If not, then such actuaries might consider adding some conservatism to the reinsurance cash flows. Also,

some actuaries might take into account the long-term ability of the reinsurer to assume such risks before utilizing reinsurer cash flows.

The degree of conservatism may depend on whether the inclusion of reinsurance cash flows is necessary in order to pass the self-support and lapse-support tests. If such inclusion is essential, many actuaries would be inclined to review the reinsurer's contractual responsibilities in light of the risks implied by the tests, and to adopt a conservative stance.

An additional consideration when taking reinsurance cash flows into account is whether the reinsurance arrangement involves a related company (e.g., a parent, affiliate, or subsidiary company). Here, many actuaries would look to the insurer's nonguaranteed element framework. For example, if the insurer and the related company involved in the reinsurance arrangement are viewed on a consolidated basis (for pricing, financial, and/or management analysis purposes) then testing might also be done on a consolidated basis. In this case, reinsurance cash flows in the two companies may exactly offset each other, so this testing would be equivalent to testing without reflecting the reinsurance cash flows. Some actuaries may also take a conservative view and show that the tests are satisfied both on a consolidated basis and on a basis that reflects only the insurer's cash flows (as if the reinsurance did not involve a related company).

Several possible arrangements might exist between the ceding company and the reinsurer about sharing data regarding a policy form that is reinsured. Depending on the circumstances, the actuary may need to rely on information from one or both companies to structure the accumulated value of cash flow testing for the Model.

There may be cases where it is appropriate to use data from both the ceding company and the reinsurer in developing assumptions underlying the DCS. In performing the self-support and lapse-support tests, ASOP 23, Data Quality, may be helpful.

There are several possible practices with respect to such reinsurance arrangements, for example:

1. The reinsurance cash flows could be included directly in the cash flows for the self-support and lapse-support tests. Many actuaries would consider this appropriate if the reinsurance is automatic and the cash flows of the arrangement are guaranteed.
2. The reinsurance agreement could be reduced to a net reinsurance cost (or benefit), perhaps on an underwriting class, issue age, and/or durational basis for the purposes of accumulating the cash flows of the policy form. The actuary might consider this appropriate if the reinsurance eliminates certain risks entirely (e.g., certain classes of substandard risk) and can easily be estimated as a net cost. If the reinsurance is determined to be a net benefit to the ceding company and will exist only on a small part of the insurance issued on the policy form, many actuaries would consider it reasonable to ignore the reinsurance for the purposes of the tests.
3. The reinsurance cost could be calculated or estimated on an overall basis and considered part of the "general business expense" of the ceding company and allocated in a similar manner to general overhead. The

actuary might consider this appropriate if the ceding company is not directly participating in the risk.

Of course, some combination of the above actions might be appropriate or other practices might fit the particular circumstances.

R) PERSONAL LIABILITY

Q. Should the actuary be concerned about personal legal liability?

A. Professionals should always be concerned about personal legal liability. In this situation, it should be noted that potential protections afforded an appointed actuary in the model Standard Valuation Law are not included in the Model regulation (also note that the actual law and regulation adopted by a state may vary from the models). Specifically, Section 3(D)(6) of the model Standard Valuation Law says, “Except in cases of fraud or willful misconduct, the qualified actuary shall not be liable for damages to any person (other than the insurance company and the commissioner) for any act, error, omission, decision or conduct with respect to the actuary’s opinion.” Similar wording is not in the Model regulation. The actuary should understand the implications of accepting an appointment as illustration actuary, whether as an employee of the insurance company issuing the products or whether in a consulting-type of engagement. Many actuaries find it prudent to (1) seek an indemnification agreement with the company under which the company agrees to reimburse and hold the actuary harmless against legal claims brought under the regulation; and (2) seek advice from legal counsel. However, there is no requirement that the actuary obtain an indemnification agreement or legal advice prior to issuing the illustration opinion.

S) SAMPLE CERTIFICATION

1) Q. What sort of certification must the illustration actuary make?

A. The Model requires the illustration actuary to certify that the DCSs of nonguaranteed elements for illustrated plans of insurance meet the requirements of the Model. A sample certification follows, however the reader should keep in mind that he or she is the party ultimately responsible for the form of the certification and the following only provides an example that may or may not apply in the reader's specific situation.

The sample certification language is meant to cover a variety of common situations but does not cover all possible situations or additional state requirements and should be adapted and altered as the actuary deems necessary or appropriate. The individual actuary is responsible for assuring that the language used in the illustration certification accurately represents the situation and the actuary's opinion. The actuary should not use the sample certification language provided herein as a substitute for language that is more appropriate to a given situation.

Sample Certification

To: Board of Directors, *XYZ Insurance Company*
Insurance Commissioner in the State of *ABC*

I, *Name*, am *title or relationship to company* of *XYZ Insurance Company* and am a member of the American Academy of Actuaries. I am familiar with ASOP No 24 and was appointed by the Board of Directors of said insurer to be the illustration actuary for *all* policy forms subject to the Life Insurance Illustrations Regulation (Regulation) for this state. The appointment was documented in the Board minutes dated *mm/dd/yy*, the relevant portion of which is attached to this certification. I meet the qualification standards of the American Academy of Actuaries for making this certification and the requirements of applicable state regulations

Scales of nonguaranteed elements used in illustrating the plans of insurance described above meet the requirements of the Regulation. The disciplined current scales for these plans are in conformity with the Actuarial Standard of Practice for Compliance with the NAIC Life Insurance Illustration Model Regulation (ASOP 24) promulgated by the Actuarial Standards Board except as noted below. Moreover:

- No currently payable scale for business issued within the last five years and within the scope of this certification has been reduced for reasons other than changes in the experience factors underlying the disciplined current scale except as follows....

- Nonguaranteed elements illustrated for new policies are consistent with those illustrated for similar in-force policies, except as follows...

- Illustrated nonguaranteed elements for new and in-force policies subject to this regulation are consistent with the nonguaranteed elements amounts actually paid, credited or charged to the same or similar forms, except as follows:...

- The minimum expenses used in the calculation of the disciplined current scale for all policy forms subject to this regulation were Fully Allocated (*alternatively marginally allocated or from a generally recognized expense table approved for this purpose by...*).

I have relied on data supplied by.....in making this certification.

The only procedures that I have used that depart materially from those set forth in ASOP 24 are the following:

Title

Date

Company Name

Address