A PUBLIC POLICY PRACTICE NOTE

Life Insurance Illustrations: Application of the National Association of Insurance Commissioners (NAIC) Life Insurance Illustrations Model Regulation and Actuarial Standard of Practice No. 24

September 2021

Developed by the Life Illustrations Work Group
of the American Academy of Actuaries

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The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted 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 Life Practice Council of the American Academy of Actuaries. The IWG is charged with updating this practice note to better reflect current practices actuaries are using when complying with ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*, which was revised and adopted in December 2016. This practice note has incorporated and updated the previously separate document *Practice Note Addendum: Compliance with Actuarial Guideline XLIX* (August 2015).

Due to the unique nature of indexed life products and the requirements of Actuarial Guideline XLIX and Actuarial Guideline XLIX-A, the practice note has a specific section (Section 4) addressing policies with index-based interest crediting. Section 4 of the practice notes addresses index-based interest products specifically, whereas the other sections address questions/issues that apply to all illustrated products, including indexed life products. The practice note should be read in its entirety to get a more complete view of practices.

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 2021. The purpose of the practice note is to assist actuaries in performing professional services in compliance with ASOP No. 24 and to provide information to actuaries on current or emerging practices in which their peers are engaged. Actuaries are not in any way recommended to or required to comply with this practice note or to conform their work to the practices described in this practice note. No representation of completeness is made; other approaches also may be in common use.

Throughout this practice note, the authors have suggested sections of the Life Insurance Illustration Model Regulation, ASOP No. 24, Actuarial Guideline XLIX (AG 49) and Actuarial Guideline XLIX-A (AG 49-A) that the authors believe may be "pertinent" to the various questions posed. Such statements are only illustrative but are not intended to indicate that the list of suggested Model, ASOP, AG 49, or AG 49-A provisions is exhaustive. ASOP No. 1, section 4.3 states that: "Actuaries are responsible for determining which ASOPs apply to the task at hand." Please note that bolded words in the "Pertinent Sections of the ASOP" refer to ASOP defined terms, and actuaries should refer to the ASOP for those definitions.

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We welcome your comments and suggestions for additional questions to be addressed by this practice note. Please address all communications to the Academy's life policy analyst at lifeanalyst@actuary.org.

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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 (#582).

3) AG 49: Actuarial Guideline XLIX, Application of the Life Illustration Model Regulation to Policies with Indexed-Based Interest as adopted on August 29, 2016.

4) AG 49-A: Actuarial Guideline XLIX-A, Application of the Life Illustration Model Regulations to Policies with Indexed-Based Interest as adopted on November 25, 2020.

5) Benchmark maximum rate: The rate calculated in Sections 4.A and 4.B of the AGs that is used in the determination of the maximum illustrated rate for each index account. The benchmark maximum rate limits the illustrated rate or index credits for each index account in the policy.

6) The lookback approach: The approach described in Sections 4.A and 4.B of AG 49 and AG 49-A.

7) BIA: Benchmark Index Account, as defined under Section 3 of AG 49/AG 49-A.

8) 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.

9) 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.

1. Experience Assumptions

Q 1.1: 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 usually can use judgment to determine a reasonable time frame from which data will be analyzed for assumption-setting purposes. The ASOP does not define specifically the time period that would qualify as "recent." Many actuaries choose the time frame 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." Many actuaries consider longer time frames for credibility purposes.

Once a 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 nevertheless may 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 many actuaries use:

Investment Returns: For most general account assets such as bonds or mortgages, the most recent month to most recent year. Many actuaries take into account investment allocation procedures (e.g., portfolio vs. new money rate) in setting this time frame.

When other investment returns may be sensitive to business or economic cycles, such as alternative investments or hedges, as per Section 3.4.1(a), the actuary should consider an appropriate time frame commensurate with such cycles.

Expenses: The most recent year generally is the best indicator of current expense levels; however, some actuaries validate unit expense models using the most recent three to five 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 generally is 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 rarely are free of fluctuations. Therefore, many actuaries use expected experience and applicable tax rates based on most recent information.

Q 1.2: 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 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. If consistent with a company's nonguaranteed element framework, then some actuaries might exclude the immediate effects of these types of events when determining experience factors for the DCS. Other

actuaries might spread the effect 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 ongoing," the ASOP states that the actuary "should reflect changes in experience."

For example, if an extraordinary event generates expenses that are significant but not ongoing, some actuaries exclude these expenses when determining the DCS. If there are expected ongoing expenses generated by the event these would normally be included in the development of the DCS when this is determined to be significant and ongoing. Similarly, some actuaries 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 normally would be reflected. As stated in Section 3.10.b. of the ASOP, the documentation "should include the following … description of and rationale for, any other calculation methods and assumptions used to carry out the tests and demonstrations described" in the ASOP.

Q 1.3: The ASOP mentions certain assumptions specifically (i.e., interest, mortality, taxes, direct sales costs, other expenses, and persistency). Are there other assumptions illustration actuaries consider? (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.*
>
> *When 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 and subject to the limitations of AG 49, 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*** *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 any changes, such as the following, to the extent known to the actuary: …*
> ***(e)*** *New or revised reinsurance agreements.*

A. In testing, many actuaries consider all assumptions that could affect the DCS and not just those specifically mentioned in the ASOP. 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 usually constitute the factors most likely to have a significant effect on the self-support and lapse-support tests. Many 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, also may 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 would reflect reinsurance effects that would make the DCS less favorable.

Q 1.4: How does the actuary usually determine assumptions that are developed without the benefit of any directly applicable 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. When determining the extent to which **actual experience** is credible, the actuary should refer to ASOP No. 25, Credibility Procedures. 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.…*

A: In the event that no source of data can be identified that provides pertinent experience for a particular assumption, many actuaries typically would make a reasonable estimate of anticipated experience for that element. For example, some actuaries include an analysis of the theoretical maximum and minimum values of the factor and a rationale for the value that was chosen. Many actuaries make adjustments to any available relevant experience to derive an assumption that reflects situations that, based on the actuary's judgment, are materially different than the experience being used. Many actuaries would analyze the effect of using other values for the assumption in question. Actuaries will document the source and rationale for the experience and adjustments being used as required by Section 3.10 of the ASOP.

Q 1.5: How may improvements or other trends in experience be included when determining the assumptions underlying the DCS?

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.*

*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 states that trends in improvement may be projected to the effective date of the DCS but not beyond that date. For example, experience mortality often is 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.

If the actuary has determined that deterioration has occurred or is likely to occur, then as per the ASOP, "the actuary should recognize such deterioration in determining the

assumptions to be used." In addition, if the actuary anticipates that the experience will deteriorate in the future, some actuaries would include the future assumed deterioration in determining the assumptions.

2. Investment Return Factors

Q 2.1: What investment return assumption would 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*** *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 ….*
>
> ***Section 3.4.1 (a)*** *Investment Return—The experience factor used for investment income (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.*

A. As the ASOP states in section 3.4.1 (a), the investment return factor underlying the DCS "should be reasonably based on recent actual investment experience" and many actuaries consider this as being analyzed within the insurer's nonguaranteed element framework. 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.

Q 2.2: 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 would 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* ***experience factor*** *used for investment income (the investment return factor) 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. For a company using a portfolio method to allocate investment income among policy forms, many actuaries calculate the investment return factor based on the portfolio rate of the assets underlying the book of business consistent with the company's nonguaranteed element framework. 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 should be used to develop the investment return factors. Further, the actuary reflects 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 that 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 many actuaries 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 never is greater than what can be reasonably produced by the company investment income allocation method, under the assumption that the new money rates remain unchanged in the future.

Q 2.3: 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* ***experience factor*** *used for investment income (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.*
>
> ***Section 3.4.2*** *Relationship of Actual Experience to Disciplined Current Scale – 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. 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, many 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, many actuaries use return of the total portfolio. In this case, many actuaries have the investment income based on a pro-rata share (the portfolio method). Alternatively, some actuaries find 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 reasonably be based on recent actual investment experience and should include any significant and continuing

deterioration that has or is likely to have occurred between the date of the experience and the effective date of the disciplined current scale.

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 methodology). For example, in determining an investment return factor based on the portfolio method, actuaries do not use any projected future improvement in returns based on an anticipated improvement in portfolio interest rates that is expected to occur after the effective date of the disciplined current scale (note that an interest rate increase may not always be an improvement or vice versa). However, if deterioration in the investment return factors is expected to occur after the effective date of the disciplined current scale, some actuaries would reflect a less favorable investment return assumption. 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.

When determining the investment return factors under section 3.4.1, many actuaries divide the 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 generally are 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.

Q 2.4: 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* ***experience factor*** *used for investment income (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 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(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. Many actuaries allocate earnings from the investment in another line of business or subsidiary to the block of business that made the investment.

If the other lines are also subject to the Model, many actuaries coordinate the investment return factors with the other lines of business. If the block of business assumes a periodic return from a subsidiary, many actuaries consider an offsetting periodic expense or reduction in investment return.

Q 2.5: 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* ***experience factor*** *used for investment income (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.*
>
> ***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. As no assets are being purchased, the actuary needs to use judgment in developing the investment return factors. Various approaches currently are 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.

As required by Section 3.10(a) of the ASOP, the actuary should document the assumptions used in the development of the investment return factors.

Q 2.6: 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 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 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* ***experience factor*** *used for investment income (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.

Many 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 often are 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.

3. Illustrated Interest Crediting Rates

Q 3.1: A company's illustrated and currently payable scales often are 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 refiling of a new certification each time investment returns change?

Pertinent Sections of the ASOP:

> ***Section 4.1*** *Certification—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 refiling 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 generally it follows (at least for a reasonable range of investment returns) that the new scale also will 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 also may be other acceptable methods besides the spread approach that 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.

Q 3.2: Can illustrated nonguaranteed interest crediting rates vary with duration?

Pertinent Sections of Model:

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.*

Pertinent Sections of ASOP:

Section 3.3 *Illustrated Scale Requirements—The actuary should ensure that the* ***illustrated scale*** *meets the requirements imposed by the Model as follows.*

3.3.1 Currently Payable Scale—The ***illustrated scale*** *must not be more favorable to the policyholder than the* ***currently payable scale*** *at any duration.*

3.3.2 Disciplined Current Scale—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* ***experience factors*** *used for investment income (the investment return factor) 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 *… When 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 and subject to the limitations of AG 49, 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 toward any portions of the business that do not meet the self-support test in their own right.…*

A. Nothing in the Model or the ASOP specifically forbids this practice. However, several provisions constrain the illustration actuary.

Section 3.3 of the ASOP requires that the illustrated scale (including varying interest crediting rates and persistency bonuses) must not be more favorable 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 generally may perform the self-support and lapse-support tests in the aggregate (i.e., for a policy form), but in doing so, many actuaries would 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 consider whether varying interest crediting rates might cause such a shift.

Q 3.3: Can companies illustrate interest crediting rates for policies with large face amounts higher than interest crediting rates 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 *… When 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 and subject to the limitations of AG 49, 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 toward 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.B *When using an illustration in the sale of a life insurance policy, an insurer or its producers or other authorized representatives shall not:…*

(2) *Use or describe nonguaranteed elements in a manner that is misleading or has the capacity or tendency to mislead.*

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.*

Section 11.B *The illustration actuary shall certify that the disciplined current scale used in illustrations is in conformity with the Actuarial Standard of Practice for Compliance with the NAIC Model Regulation on Life Insurance Illustrations promulgated by the Actuarial Standards Board, and that the illustrated scales used in insurer-authorized illustrations meet the requirements of this regulation.*

A. Many actuaries find several provisions constrain the illustrated scale.

Many actuaries see the Model and the ASOP allowing 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, many actuaries perform the self-support and lapse-support tests in the aggregate for a policy form and in doing so, 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. For example, some actuaries recognize 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. Some actuaries find 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 also must provide a disclosure in the certification whenever the actual credited rates for a given policy form turn out to be different 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 Section 6.C of the Model, which is applicable to new business, 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, some actuaries 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 the illustration does not show an interest rate in excess of the earned interest rate underlying the DCS. Because the illustration actuary certifies that the nonguaranteed elements used in illustrations meet the requirements of the regulation, and in addition the regulation prohibits using or describing nonguaranteed elements in a manner that is misleading or has the capacity or tendency to mislead, some actuaries consider the Model Section 6.B when certifying.

4. Index-Based Interest under AG 49 & AG 49-A

Q 4.1: What is a reasonable process to follow when setting illustrated rates under the ASOP, Model, and applicable AG?

A. Although some actuaries may utilize different approaches, many actuaries would consider the following steps:

1. Determine whether AG 49 or AG 49-A is applicable.

2. Determine the benchmark maximum rate in accordance with Section 4 (A) and 4 (B) of the applicable AG.

3. Determine the maximum illustrated rate for each additional account (if any) in accordance with Section 4 (C) of the applicable AG.

4. For illustrated loan amounts, decrease the maximum illustrated rate and/or increase the illustrated loan charge if necessary to comply with Section 6 of the applicable AG.

5. Adjust the maximum illustrated rates and/or other illustrated policy elements if necessary to pass DCS testing in accordance with the Model, the ASOP, and Section 5 of the applicable AG.

6. Document assumptions, methodologies, and any material deviations from the ASOP.

Q 4.2: What would an actuary do about certain requirements of the AGs that are related to the content and format of the illustration?

A. Many actuaries inform the responsible officer of the content and format requirements established by the AGs to ensure adherence to all aspects of the AGs.

Q 4.3: Do the AGs apply when considering how to illustrate an indexed account on a variable universal life insurance product or a registered indexed universal life (IUL) product?

Pertinent Section of AG 49:

Section 2. *This Actuarial Guideline shall apply to any life insurance illustration that meets both (i) and (ii), below:*

i. The policy is subject to Model Regulation #582.

ii. Interest credits are linked to an external index or indices.

Pertinent Section of AG 49-A:

Section 2. *This Actuarial Guideline shall apply to any life insurance illustration that meets both (i) and (ii), below:*

i. The policy is subject to Model Regulation #582.

ii. The policy offers Indexed Credits.

Pertinent Section of the Model:

Section 3*. This regulation applies to all group and individual life insurance policies and certificates except:*

A. Variable life insurance;

B. Individual and group annuity contracts;

C. Credit life insurance; or

D. Life insurance policies with no illustrated death benefits on any individual exceeding $10,000.

A. No. Variable life and registered IUL insurance are outside the scope of the Model and thus outside the scope of the AGs. These types of products are under Securities and Exchange Commission (SEC) jurisdictions. For considerations regarding the illustration of variable life insurance, many actuaries refer to Actuarial Guideline XV, Model Regulation #270, and any applicable Financial Industry Regulatory Authority (FINRA) materials. Some actuaries may choose to use the AGs as guidance for illustrations of index accounts in circumstances where the AGs do not conflict with variable life insurance illustration requirements but are not required to do so.

Q 4.4: When determining the Benchmark Index Account as defined in Section 3 of the applicable AG, are account charges that pay for contract expenses treated differently than account charges that support index parameters (e.g., caps, participation rates, floors)?

Pertinent Section of AG 49:

Section 3.B vi *Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one BIA may be used in determining the maximum illustrated crediting rates for the policy's Index Accounts, subject to the requirements of 5.D. However, for each*

Index Account within the policy, only one BIA shall apply. Any rate calculated in 4.B shall not apply for an index account if the account charges for the applicable BIA exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account.

***Section 3.B vii** Additional amounts credited are not less than the additional amounts credited for any corresponding Index Accounts within the policy in any policy year. Any rate calculated in 4 (B) shall not apply for an Index Account if the additional amounts credited for the applicable Benchmark Index Account **are** less than the additional amounts credited for that Index Account in any policy year. Additional amounts include all credits that increase policy values, including but not limited to experience refunds or bonuses.*

Pertinent Section of AG 49-A

***Background** In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

***Section 3.D vi.** The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.*

***Section 3.D ix.** A single Benchmark Index Account will be determined for each policy. This can be either an Index Account offered with the illustrated policy or determined according to Section 4 (A) (ii) for purposes of complying with this guideline. A policy shall have no more than one Benchmark Index Account.*

A. Under AG 49, no. Account charges as defined in AG 49 include all charges applicable to an Index Account, whether deducted from policy values, premiums, or other amounts transferred into such Index Account. Many actuaries believe the definition does not to make a distinction between contract expense and index parameters for charges. The AG permits more than one BIA if the charges change the index parameters, but if the charges do not affect the index parameters then the Section 4 maximum illustrated rates would be the same.

Many actuaries feel this question is not applicable under AG 49-A because there is only one BIA under AG 49-A and the AG 49-A limitations related to the hedge budget for the BIA would be used.

Q 4.5: Can the illustrated rate for the Alternate Scale be less than the maximum rate for the Alternate Scale?

Pertinent Section of AG 49

Section 3.A *Alternate Scale: A scale of nonguaranteed elements currently being illustrated such that:*

i*. The credited rate for each Index Account does not exceed the lesser of the maximum credited rate for the illustrated scale less 100 basis points and the credited rate for the Fixed Account. If the insurer does not offer a Fixed Account with the illustrated policy, the credited rate for each Index Account shall not exceed the average of the maximum credited rate for the illustrated scale and the guaranteed credited rate for that account. However, the credited rate for each Index Account shall never be less than the guaranteed credited rate for that account.*

Pertinent Section of AG 49-A

Section 3.A *Alternate Scale: A scale of nonguaranteed elements currently being illustrated such that:*

i*. The Annual Rate of Indexed Credits for each Index Account does not exceed the lesser of the maximum Annual Rate of Indexed Credits for the illustrated scale less 100 basis points and the credited rate for the Fixed Account. If the insurer does not offer a Fixed Account with the illustrated policy, the Annual Rate of Indexed Credits for each Index Account shall not exceed the average of the maximum Annual Rate of Indexed Credits for the illustrated scale and the guaranteed Annual Rate of Indexed Credits for that account. However, the Annual Rate of Indexed Credits for each Index Account shall never be less than the guaranteed Annual Rate of Indexed Credits for that account.*

A. Many actuaries would interpret AG 49 to say that it limits the rate used in the Alternate Scale, but that a lower rate is not prohibited.

Many actuaries would interpret AG 49-A to say that it limits the maximum Indexed Credits illustrated in the Alternate Scale, but that a lower rate is not prohibited.

Q 4.6: If a policy does not have an account that meets the definition of a BIA, how would the maximum rate for the BIA of a policy be determined?

Pertinent Sections of AG 49:

Section 3. *Benchmark Index Account: An Index Account with the following features:*

i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)

ii. An annual cap is used in the interest calculation.

iii. The annual floor used in the interest calculation shall be 0%.

iv. The participation rate used in the interest calculation shall be 100%.

v. Interest is credited once per year.

*vi. Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy's Index Accounts, subject to the requirements of 5.D. However, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or fr*om premiums or other amounts transferred into such Index Account.

vii. Additional amounts credited are not less than the additional amounts credited for any corresponding Index Accounts within the policy in any policy year. Any rate calculated in 4 (B) shall not apply for an Index Account if the additional amounts credited for the applicable Benchmark Index Account are less than the additional amounts credited for that Index Account in any policy year. Additional amounts include all credits that increase policy values, including but not limited to experience refunds or bonuses.

Section 4.A i If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

***Section 4.A ii** If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).*

Pertinent Sections of AG 49-A:

***Background** In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

***Section 3D.** Benchmark Index Account: An Index Account with the following features:*

i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)

ii. An annual cap is used in the interest calculation.

iii. The annual floor used in the interest calculation shall be 0%.

iv. The participation rate used in the interest calculation shall be 100%.

v. Interest is credited once per year.

vi. *The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.*

vii. There are no enhancements or similar features that provide additional Indexed Credits in excess of the interest provided by 3 (D) (i) through 3 (D) (v), including but not limited to experience refunds, multipliers, or bonuses.

viii. There are no limitations on the portion of account value allocated to the account.

ix. A single Benchmark Index Account will be determined for each policy. This can be either an Index Account offered with the illustrated policy or determined according to Section 4 (A) (ii) for purposes of complying with this guideline. A policy shall have no more than one Benchmark Index Account.

Section 4.A i *If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).*

Section 4.A ii *If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).*

A. If a policy does not have an account that meets the definition of a BIA, the actuary must create a hypothetical account that meets the definition of a BIA and then use judgment to determine a hypothetical current cap per Section 4.A.ii of the AGs. Many actuaries would consider the amount it would cost to hedge the benefit and determine the hypothetical cap that could be afforded by the hedge cost. This hypothetical cap is then used as part of the BIA to determine the maximum rate for the BIA. This exercise may need to be repeated if multiple BIAs can be developed under AG 49. Note AG 49-A does not allow for multiple BIAs. Further, AG 49-A limits the cost to hedge the benefit to not exceed the Annual Net Investment Earnings Rate and does not allow for enhanced indexed features to increase the indexed credits in the development of a BIA.

EXAMPLE 1: My policy has an account that meets most of the definition of a BIA, except it uses a different index. In this example, under both AGs, many actuaries would solve for a cap that could be afforded if the account used the S&P 500 index rather than the actual index. This hypothetical cap would then be used as part of the BIA to establish the BIA maximum illustrated rate.

EXAMPLE 2: My policy has an account that meets most of the definition of a BIA, except it has a 1% floor. In this example, under both AGs, many actuaries would solve for a cap that could be afforded if the account had a 0% floor rather than the 1% floor. This hypothetical cap would then be used as part of the BIA to establish the BIA maximum illustrated rate.

EXAMPLE 3: My policy has two accounts, neither of which meets the definition of a BIA. One account has a 1% floor, and 8% cap, and the other account has a 0% floor and a 2% of account value charge to enhance the cap to 12%. Under AG 49, a separate BIA could be developed for each account and used to establish a benchmark maximum rate for each account. Under AG 49-A, a single hypothetical BIA would be developed and used to establish a single benchmark maximum rate for both accounts, and the AG 49-A limitations related to the hedge budget for the BIA would be used.

Q 4.7: How would a supportable current annual cap be determined for the hypothetical BIA?

Pertinent Section of AG49/AG49-A:

> ***Section 4.A ii*** *If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).*

A. The AGs require actuarial judgment regarding the hypothetical BIA. Many actuaries would determine a hypothetical cap rate that is financially equivalent to the insurer's non-BIA. For example, if a BIA was offered by the insurer, the insurer would be reasonably indifferent between offering the hypothetical cap rate on the BIA and the actual cap rate on the insurer's non-BIA. Then the actuary would use that cap rate to perform the calculations in Sections 4.A–B to determine the maximum illustrated credited rate on an annual basis. Many actuaries document the rationale and calculation for the hypothetical cap equivalence.

Q 4.8: If a product only offers one account with a 11.5% cap and a 1% floor using the S&P 500 on an annual point-to-point basis and no additional charges to increase the hedge budget, how would the actuary determine the maximum rate for the index account in Section 4?

Pertinent Section of AG 49:

> ***Section 4.A ii*** *If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).*
>
> ***Section 4.B*** *For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.*

Section 4.C *For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B)*

Pertinent Section of AG 49-A:

Section 4.A ii *If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).*

Section 4B*. For the Benchmark Index Account the Annual Rate of Indexed Credits shall not exceed the minimum of (i) and (ii):*

i. the arithmetic mean of the geometric average annual credited rates calculated in 4 (A).

ii. 145% of the Annual Net Investment Earnings Rate.

Section 4.C *For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):*

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.

ii. *The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.*

A. Many actuaries would first determine the maximum rate for the Benchmark Index Account. Because this example policy does not have an account that meets the definition of a BIA, a hypothetical account would be constructed. Then, using a lookback methodology on the actual account parameters, determine a return on the Index account and compare that to the hypothetical BIA return. The maximum illustrated rate cannot be higher than the lesser of these two values.

Assume a policy that offers an 11.5% cap and 1% floor on the S&P 500 could afford a 14% cap and 0% floor on the S&P 500. Under the AGs, the maximum rate for the hypothetical account that meets the definition of a BIA would be calculated using a 14% cap. For example, assume a lookback calculated for the hypothetical account (14% cap, 0% floor) meeting the definition of a BIA results in a maximum illustrated rate of 7.5%.

AG 49-A Section 4B applies an additional limit on the lookback results of 145% of the Annual Net Investment Earnings Rate. So in the example, if the Annual Net investment Earnings Rate was 5%, the annual rate of index credits would be the lesser of 7.5% and 145%*5%=7.25%, so 7.25%. If the Annual Net investment Earnings rates was 5.25%, the annual rate of index credits would be the lesser of (7.5%, 145%*5.25%=7.61%), which would be 7.5%.

Next, the maximum rate for the account being illustrated would be determined. In accordance with Section 4.C of the AGs, actuaries use actuarial judgment reflecting the fundamental characteristics of the index and the appropriate relationship to the expected risk/return of the BIA. Because this example account is based on the S&P 500 index and uses annual point-to-point crediting, the risk/return relationship is similar, so many actuaries would repeat the lookback calculations for the maximum rate for the BIA, but instead using the 11.5% cap and 1% floor. Assume the result is a 7% maximum illustrated rate, which is less than the 7.5% or 7.25% percent benchmark maximum rate under either AG with a 5% or 5.25% Annual Net Investment Earnings Rate. The lesser of this and the benchmark maximum rate would be used for this account—7% in this example.

Note the maximum illustrated rates calculated under Section 4 may need to be adjusted due to other sections of the AGs to ensure compliance under Section 6 and passing of self and lapse support tests.

Q 4.9: My company does not use the S&P 500 as an index in all Indexed Accounts. Am I still limited by the results from the S&P 500 even if the index I am illustrating is not an S&P 500 account?

Pertinent Section of AG 49:

> ***Section 4.C*** *For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the rate calculated in 4 (B).*

Pertinent Section of AG 49-A:

> ***Section 4.C*** *For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):*
>
> > *i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.*
> > *ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use*

actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate

A. Yes. The AGs state that in no event shall the credited rate for the illustrated scale exceed the applicable benchmark maximum rate, which is calculated using the S&P 500 index.

Q 4.10: Does Section 4.C require the use of a lookback approach to determine the maximum illustrated rate for accounts with other types of equity, bond, or commodity indexes and/or other crediting methods?

Pertinent Section of AG 49:

Section 4.C *For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the rate calculated in 4 (B).*

Pertinent Section of AG 49-A:

Section 4.C.ii *The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate*

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. No, neither the lookback in the AGs nor other type of lookback approach is required. If the actuary's judgment is that the period of index history is reasonable, many actuaries would use a lookback approach for the other accounts and then use the lesser of the lookback rates and the benchmark maximum rate. For example, many actuaries would use a lookback approach for most equity indexes and crediting methods but may find the methodology inappropriate for some other indexes.

If historical data is considered abnormally positive, or trends are considered to be unlikely to continue, many actuaries will not use the data or will make conservative modifications to the data before it is used. For example, if a bond index has consistently

increased in recent history and the current interest rate environment is low, many actuaries might feel that the trend may not continue for a significant period in the future. In that event, some actuaries might determine an illustrated rate for such a bond index as an amount related to the amount it would cost to hedge the benefit. Similar thinking might be applied to some equity or commodity indexes.

Q 4.11: Can I use the lookback approach on index history to determine the maximum illustrated rate for accounts with other types of equity, bond, or commodity indexes if it is less than 65 years?

Pertinent Section of AG 49:

> ***Section 4.C*** *For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the rate calculated in 4 (B).*

Pertinent Section of AG 49-A:

> ***Section 4.C*** *For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):*
>
> > *i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.*
> > *ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.*

A. The AGs do not specify a minimum period of index history, so it is not prohibited to use the available index history without modification. However, some actuaries may modify their approach depending on the length of index history available and look to other factors that would affect the determination of the assumed average annual crediting rates for such index accounts. As with other illustration assumptions, many actuaries would include the rationale for these assumptions in their documentation. For example, some actuaries would determine a lookback rate for the available period and compare it with an S&P 500 lookback rate over the same time period and then make adjustments to impute an assumed average annual crediting rate over the historical period.

Q 4.12: How would the maximum illustrated rate be determined for an account that credits index-based interest less frequently than annually?

Pertinent Section of AG 49:

> ***Section 4.C*** *For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the rate calculated in 4 (B).*

Pertinent Section of AG49A:

> ***Section 4.C*** *For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):*
>
> > *i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.*
> >
> > *ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.*

A. AG 49 and AG 49-A require actuarial judgment regarding this topic. Many actuaries would perform the calculations in Sections 4.A and 4.B for AG 49 or Sections 4.A and 4.B.i for AG 49-A, but with modifications to accommodate the crediting method for the multi-year index. For example, if an account credits interest every two years, some actuaries may choose to use 24-year or 26-year periods instead of 25-year periods in the AG 49 lookback calculation. Some actuaries would calculate the multi-year index lookback rate and convert it to an equivalent annual rate to compare to the maximum rate for the BIA for AG 49, or the BIA plus Supplemental Hedge Budget for AG 49-A. Some actuaries may convert the BIA to an equivalent multi-year rate and compare to the AG 49/AG 49-A lookback performed, which should be mathematically equivalent to the first approach. Note, the guidelines make it clear that for AG 49 the illustrated rate for the multi-year Index Account cannot exceed the maximum rate for the applicable BIA, and for AG 49-A that the Annual Rate of Indexed Credits cannot exceed the maximum rate for the BIA plus any Supplemental Hedge Budget for the Index Account.

Q 4.13: Does Section 4 directly limit an illustrated bonus?

Pertinent Sections of AG 49

Section 4: Illustrated Scale

The credited rate for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

B. For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.

C. For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B).

D. At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).

Section 5 Disciplined Current Scale

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all benefits including illustrated bonuses.

Pertinent Sections of AG 49-A

3. Definitions

C. Annual Rate of Indexed Credits: The total annualized Indexed Credits expressed as a percentage of the account value used to determine the Indexed Credits.

H. Indexed Credits: Any interest credit, multiplier, factor, bonus, charge reduction, or other enhancement to policy values that is linked to an index or indices. Amounts credited to the policy resulting from a floor greater than zero on an account with any interest credit, multiplier, factor, bonus, charge reduction, or other enhancement to policy values that is linked to an index or indices are included.

4. Illustrated Scale

The total Annual Rate of Indexed Credits for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for the Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers a Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).

ii. If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

B. For the Benchmark Index Account the Annual Rate of Indexed Credits shall not exceed the minimum of (i) and (ii):

i. the arithmetic mean of the geometric average annual credited rates calculated in 4 (A).

ii. 145% of the Annual Net Investment Earnings Rate.

C. For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.

ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value

using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.

D. For the purposes of compliance with Section 6 (C) of Model #582, the Supplemental Hedge Budget is subtracted from the Annual Rate of Indexed Credits before comparing to the earned interest rate underlying the disciplined current scale.

At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).

Section 5 Disciplined Current Scale

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all illustrated benefits including any illustrated benefits and bonuses that impact the policy's account value.

A. Actuaries may have differing interpretations as to how illustrated bonuses fit within the AGs.

Under both AGs, there is a reference to bonuses in Section 5 C, stating that illustrated bonuses must be accounted for in DCS testing.

Under AG 49, there is no explicit reference to a bonus limitation in Section 4. Some actuaries interpret this to mean that there is no explicit limit to the illustrated bonus in AG 49 Section 4 and illustrate an index credited rate plus a bonus, so that the total credited benefits exceed the maximum rate for the index credit alone so long as the bonuses pass DCS testing as described in AG 49 Section 5. Some actuaries consider certain bonuses to be part of the index interest credit, and thus limit the total credited benefits as described in AG 49 Section 4. Other interpretations may apply based on different product designs and policy forms.

Under AG 49-A, there is an explicit reference to bonuses which are linked to an index or indices in the definition of Indexed Credits in Section 3.H, and Section 4 limits the total annual rate of indexed credits for the illustrated scale. Therefore, it is clear that illustrated bonuses that are linked to an index or indices are limited as a component of the total annual rate of indexed credits. To the extent that such bonuses are supported by a supplemental hedge budget, their impact on illustrated index credits would be limited to not exceed such supplemental hedge budget by section 4C, which may result in their having no net effect on illustrated values once any charges supporting such supplemental hedge budget have been taken into account.

Under AG 49-A, there is no explicit reference to limitation of bonuses that are not linked to an index or indices. Some actuaries interpret this to mean that there is no explicit limit to such illustrated bonus in AG 49-A Section 4 and illustrate an index credited rate plus a

bonus, so that the total credited benefits exceed the maximum illustrated index credits for the index credit alone so long as the bonuses pass DCS testing as described in AG 49-A Section 5.

Most actuaries would not consider bonuses that are solely a function of face amount or a fixed dollar amount per policy to be linked to an index or indices. When determining whether other types of bonuses are linked to an index or indices and therefore part of index credits, some actuaries may consider factors such as the following:

- Whether the bonus is determined as a percentage or factor multiplied by any component of total index credits;
- Whether the magnitude of the bonus for any given dollar amount of account value in an indexed account is based on the performance of an index or indices during the period in which such account value is invested to receive potential index credits;
- Whether the availability of the bonus entails or could be funded through hedging with options or derivatives;

Whether the bonus would increase illustrated values by more than the cost to the company of providing it, assuming 100% policy persistency.

Q 4.14: What are some of the considerations when determining what to use as the assumed interest rate underlying the DCS for the purpose of comparing against the limits in Section 5A of the AGs?

Pertinent Sections of AG 49:

Section 5.A *If an insurer engages in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed 145% of the annual net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding hedges for index-based credits) allocated to support the policy.*

Pertinent Sections of AG 49-A:

Section 5.A *If an insurer engages in a hedging program for Indexed Credits in an account, the assumed earned interest rate underlying the disciplined current scale for that account, inclusive of all general account assets, both hedge and non-hedge assets, that support the policy, net of default costs and investment expenses (including the amount spent to generate the Indexed Credits of the policy) shall not exceed the lesser of (i) and (ii):*

i. the Annual Net Investment Earnings Rate, plus 45% of the lesser of (1) and (2):

1. Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget.

2. The minimum of the Annual Net Investment Earnings Rate and the Hedge Budget that is used in the determination of the Benchmark Index Account.

ii. the Annual Rate of Indexed Credits plus the Annual Net Investment Earnings Rate minus the Hedge Budget

These rates should be adjusted for timing differences in the hedge cash flows to ensure that fixed interest is not earned on the Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget

A. When developing the assumed interest rate underlying the DCS, prior to comparing against the Section 5A limits, many actuaries would consider the recent historical experience of the portfolio earned rate, the historical experience of hedge returns over a period of time, the relationship of the historical cost of hedging to historical market returns, and the interplay of these factors. Many actuaries would consider the extent to which policy loans will be illustrated and utilized. Some actuaries may reflect other considerations or methods. If the assumed interest rate underlying the DCS exceeds the illustrated crediting rate by more than the spread the company retains, some actuaries may adjust the investment return assumed in testing such that it does not exceed the sum of the illustrated crediting rate plus the spread.

Q 4.15: How do section 4 and Section 5 of the AGs work together to develop the final illustrated values?

Pertinent Sections of AG 49:

Section 4 Illustrated Scale

The credited rate for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g.,12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

B. For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.

C. For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B).

Section 5 - Disciplined Current Scale

The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed 145% of the annual net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding hedges for index-based credits) allocated to support the policy.

D. If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582, subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.

Pertinent Sections of AG 49-A:

Section 4 Illustrated Scale

The total Annual Rate of Indexed Credits for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for the Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers a Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).

ii. If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

B. For the Benchmark Index Account the Annual Rate of Indexed Credits shall not exceed the minimum of (i) and (ii):

i. the arithmetic mean of the geometric average annual credited rates calculated in 4 (A).

ii. 145% of the Annual Net Investment Earnings Rate.

C. For any other Index Account that is not the Benchmark Index Account in 3 (CD), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.

ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.

D. For the purposes of compliance with Section 6 (C) of Model #582, the Supplemental Hedge Budget is subtracted from the Annual Rate of Indexed Credits before comparing to the earned interest rate underlying the disciplined current scale

Section 5 Disciplined Current Scale

The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for Indexed Credits in an account, the assumed earned interest rate underlying the disciplined current scale for that account, inclusive of all general account assets, both hedge and non-hedge assets, that support the policy, net of default costs and investment expenses (including the amount spent to generate the Indexed Credits of the policy) shall not exceed the lesser of (i) and (ii):

i. the Annual Net Investment Earnings Rate, plus 45% of the lesser of (1) and (2):

1. Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget.

2. The minimum of the Annual Net Investment Earnings Rate and the Hedge Budget that is used in the determination of the Benchmark Index Account.

ii. the Annual Rate of Indexed Credits plus the Annual Net Investment Earnings Rate minus the Hedge Budget.

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all illustrated benefits including any illustrated benefits and bonuses that impact the policy's account value.

Pertinent Section of the Model:

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

A. In general, Sections 4.A and 4.B of the AGs determine the possible maximum illustrated credited rate based on the BIA. Section 4.C considers the actual index parameters and its associated potential credited rates and may result in a lower limit on the illustrated credited rate than that determined in 4.A and 4.B.

Section 5 of the AGs determines the earned rate underlying the DCS testing. The actuary would develop an earned rate for DCS testing and verify that it does not exceed the limits set in Section 5. These limits differ between AG 49 and AG 49-A.

If, using the maximum illustrated rate from Section 4 and the earned rate of Section 5, the policy form passes the self and lapse support tests, the policy form could be illustrated at the maximum illustrated rate. However, if the policy form does not pass the testing, adjustments to the disciplined current scale would be necessary to find a scale that passes. These adjustments could take a variety of forms and may or may not impact calculations previously done to fulfill Section 4 or Section 5 requirements. For example, changing a cap or hedge budget for the BIA would cause a recalculation under Section 4. However, modifying non-index NGEs or further limiting the illustrated rate would not impact Section 4 calculations as long as index parameters/hedge budgets are not changed. Also, given Section 6C of the Model, if an interest rate used to determine the illustrated nonguaranteed element is shown, for new business illustrations it may be limited to less than the maximum illustrated credited rate for Section 4, depending on the earned rate underlying the DCS is Section 5. For example, if the Section 5 earned rate underlying the DCS was 7.5% and Section 4 maximum illustrated rate was 7.75%, many actuaries use judgment when looking to Section 6C of the model to determine if the actuary is comfortable showing an interest rate above 7.5% in the illustration.

Q 4.16: Are the requirements of AG 49-A (the maximum illustrated rate, DCS testing) applicable to all in-force illustrations?

Pertinent Sections of AG 49:

Section 1. *Effective Date*
This Actuarial Guideline shall be effective as follows:

i. Sections 4 and 5 shall be effective for all new business and in-force life insurance illustrations on policies sold on or after September 1, 2015.

ii. Effective March 1, 2017, Section 4 and Section 5 shall be effective for all in-force life insurance illustrations on policies within the scope of this actuarial guideline, regardless of the date the policy was sold.

iii. *Sections 6 and 7 shall be effective for all new business and in-force life insurance illustrations on policies sold on or after March 1, 2016.*

iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after December 14, 2020.

v. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies sold prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all new product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.

Pertinent Sections of AG 49-A

Section 1. *Effective Date*
This Actuarial Guideline shall be effective for all new business and in force illustrations on policies sold on or after December 14, 2020.

A. Compliance with AG 49-A is only required for illustrations of policies sold on or after December 14, 2020. It is not required for illustrations of policies sold before the effective date of AG 49-A, unless the insurer chooses to utilize AG 49-A guidance for all illustrations subject to AG 49 after the effective date of AG 49-A.

Q 4.17: What options are available to satisfy the AG requirements of illustrating loans when the difference between the loan rate and the illustrated rate is more than what Section 6 may allow?

Pertinent Section of AG 49:

Section 6 Policy Loans *If the illustration includes a loan, the illustrated rate credited to the loan balance shall not exceed the illustrated loan charge by more than 100 basis points.*

Pertinent Sections of AG 49-A:

Section 3 Definitions

I. *Loan Balance: Any outstanding policy loan and loan interest, as defined in the policy.*
J. *Policy Loan Interest Rate: The current annual interest rate as defined in the policy that is charged on any Loan Balance. This does not include any other policy charges.*
K. *Policy Loan Interest Credited Rate: The annualized interest rate credited that applies to the portion of the account value backing the Loan Balance:*
i. For the portion of the account value in the Fixed Account that is backing the Loan Balance, the Policy Loan Interest Credited Rate is the applicable annual interest crediting rate.
ii. For the portion of the account value in an Index Account that is backing the Loan Balance, the Policy Loan Interest Credited Rate is the Annual Rate of Indexed Credits, net of any applicable Supplemental Hedge Budget, for that account.
Section 6 Policy Loans *If the illustration includes a loan, the illustrated Policy Loan Interest Credited Rate shall not exceed the illustrated Policy Loan Interest Rate by more than 50 basis points. For example, if the illustrated Policy Loan Interest Rate is 4.00%, the Policy Loan Interest Credited Rate shall not exceed 4.50%.*

Pertinent Sections of the Model:

Section 4.C *"Currently payable scale" means a scale of non-guaranteed elements in effect for a policy form as of the preparation date of the illustration or declared to become effective within the next ninety-five (95) days.*

Section 4.G *"Illustrated scale" means a scale of non-guaranteed elements currently being illustrated that is not more favorable to the policy owner than the lesser of:*
(1) The disciplined current scale; or
(2) The currently payable scale.

A. For policies subject to AG 49, if the rate charged for a loan is fixed, guaranteed, and more than the 1 percent less than illustrated rate credited to the loan, many actuaries would illustrate a rate charged for a loan that is equal to the actual rate charged for a loan and would decrease the illustrated rate credited to loans to comply with AG 49 Section 6. If the illustrated rate charged for a loan is adjustable, many actuaries would consider raising the illustrated rate charged for a loan, decreasing the illustrated rate credited to the loan, or some combination of increasing the rate charged for the loan and decreasing the illustrated rate credited to the loan in order to meet the AG 49 Section 6 requirement so long as the illustrated rate charged for the loan does not exceed the maximum specified in the contract.

For policies subject to AG 49-A, the illustrated difference between the rate charged for the loan and the rate credited to the loan is reduced to 50 basis points (i.e., the illustrated Policy Loan Interest Credited Rate as defined in AG 49-A that cannot exceed the illustrated Policy Loan Interest Rate by more than 50 bps). For the portion of the account value in an Index Account that is backing the Loan Balance, the illustrated Annual Rate of Indexed Credits which includes index-linked bonuses or other index-linked enhancements to policy values net of any applicable Supplemental Hedge Budget, cannot exceed the illustrated rate charged for the loan (which under AG 49-A does not include

any other policy charges)by more than 50 bps. Many actuaries would consider raising the illustrated rate charged for the loan (within the maximum specified in the contract), decreasing the illustrated Annual Rate of Index Credits net of any Supplemental Hedge Budget for the portion of the account value in an Index Account that is backing the Loan Balance, or some combination of these to meet the AG 49-A Section 6 requirement. Bonuses that are not index-linked are not included within the illustrated Policy Loan Interest Credited Rate that is subject to the 50 bps limit.

Regardless of how the illustrated rates charged for the loan, illustrated rate credited to the loan, or illustrated Policy Loan Interest Rate or illustrated Policy Loan Interest Credited Rate are adjusted to comply with Section 6 of the applicable AG, neither the illustrated rate credited to the loan nor the Annual Rate of Index Credits for the portion of the account value in an Index Account backing the Loan Balance that is illustrated under AG 49-A can be increased above the value determined in Section 4 of the applicable AG. The actuary should ensure the illustration meets the self-support and lapse-support requirements of the Model, and determine if any further adjustments are necessary.

Q 4.18: For the exhibits required by Section 7 C of the AG, what if the index history is less than 20 years?

Pertinent Section of AG 49:

> ***Section 7.C*** *For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical interest rates using current index parameters for the most recent 20-year period.*

Pertinent Section of AG 49-A:

> ***Section 7.C*** *For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical Indexed Credits using current index parameters for the most recent 20-year period*

A. The AGs do not specify what to do in the event that an index has less than 20 years of history. Many companies would show a table with the available history and then include disclosure in the illustration that the index does not have enough history to complete the full 20-year table.

Q 4.19: If a policy contains Index Accounts with charges expressed as a percent of account value, should the additional exhibits required by Section 7.B and 7.C of the AGs be gross or net of these charges?

Pertinent Sections of AG 49:

> *The basic illustration shall also include the following:*
> ***Section 7.B*** *A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).*

Section 7.C *For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical interest rates using current index parameters for the most recent 20-year period.*

Pertinent Sections of AG 49-A:

The basic illustration shall also include the following:

Section 7.B *A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).*

Section 7.C *For each Index Account illustrated, a table showing actual historical index changes and corresponding hypothetical Indexed Credits using current index parameters for the most recent 20-year period.*

A. The AGs do not specify whether the geometric average annual credited rates calculated in 4 (A) shown in the table required under Section 7.B. of the AGs should be gross or net of asset charges. The geometric average annual credited rates calculated in Section 4(A) are gross of asset charges, so many companies would use only the current annual cap(s) associated with the Benchmark Index Account(s) when calculating the rates in Section 7.B.

Some companies may adjust the rates shown in the tables required by Sections 7.B. and 7.C. to reflect certain charges. Many actuaries would communicate to the responsible officer what charges are or are not included in the calculations so the exhibits can be accompanied by appropriate disclosure.

Q 4.20: Is the Alternate Scale required in any place other than the general ledger (referred to as the "Tabular Detail" in the Model) of the basic illustration?

Pertinent Section of AG 49 and AG 49-A:

The basic illustration shall also include the following:
Section 7.A *A ledger using the Alternate Scale shall be shown alongside the ledger using the illustrated scale with equal prominence.*

A. No. Section 7 begins with: "The basic illustration shall include the following," but then 7.A begins with the words "A ledger." Even though according to the Model the Numeric Summary is part of the Basic Illustration, 7.A does not require the Alternate Scale to be displayed in the Numeric Summary.

Q 4.21: Are the requirements of Section 7 of the AGs (the Alternate Scale, the min and max table, the historical index change table) applicable to all in-force illustrations?

Pertinent Section of AG 49:

Section 1 *Effective Date*
This Actuarial Guideline shall be effective as follows:

i. Sections 4 and 5 shall be effective for all new business and in-force life insurance illustrations on policies sold on or after September 1, 2015.

ii. Effective March 1, 2017, Section 4 and Section 5 shall be effective for all in-force life insurance illustrations on policies within the scope of this actuarial guideline, regardless of the date the policy was sold.

iii. Sections 6 and 7 shall be effective for all new business and in-force life insurance illustrations on policies sold on or after March 1, 2016.

iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after December 14, 2020.

v. *Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies sold prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all new product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.*

Pertinent Section of AG 49-A:

Section 1 *Effective Date*
This Actuarial Guideline shall be effective for all new business and in force illustrations on policies sold on or after December 14, 2020.

A. Although the in-force illustration and basic illustration are separate concepts in the Model, the scope of AG 49 indicates that Section 7, as well as Section 6, applies to in-

force illustrations on policies sold on or after March 1, 2016 ,and before December 14, 2020. Policies sold before March 1, 2016, would not have Section 6 or 7 required for in-force illustrations. For policies sold on or after December 14, 2020, Section 7 of AG 49-A would apply.

Q 4.22: Is there specific place for the table and/or a disclosure describing the minimum and maximum rates required to be shown by Section 7 of the AGs?

Pertinent Sections of AG 49:

Section 7 *Additional Standards*
The basic illustration shall also include the following:…

B. A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).

Pertinent Sections of AG 49-A:

Section 7 *Additional Standards*
The basic illustration shall also include the following:…
B. A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).

A. There is nothing specified by AG 49 or AG 49-A for the placement of the table or type of disclosure surrounding the minimum and maximum rates. Many illustrations include a description of the maximum illustrated rate in its disclosures which may include the calculation methodology for the maximum illustrated rate. Some illustrations include an explanation of how the minimum and maximum rates in the table relate to the description of the maximum illustrated rate. Many illustrations include the table near the explanation of the maximum illustrated rate.

Q 4.23: If a maximum illustrated rate is further limited by self-support and lapse support testing, are the minimum and maximum values shown in 7B of the AGs affected?

Pertinent Sections of AG 49:

Section 4.A *Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.*

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to

determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

Section 7.B *A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).*

Pertinent Sections of AG 49-A:

Section 4 A*. the geometric average annual credited rate for the Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.*

i. If the insurer offers a Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).

ii. If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

Section 7.B *A table showing the minimum and maximum of the geometric average annual credited rates calculated in 4 (A).*

A. If the maximum illustrated rate is modified either by choice or in order to pass self- and lapse-support testing but a BIA indexed parameter is not adjusted, minimum and maximum values shown in 7.B would not be affected. If the company adjusts a BIA index parameter by choice or in order to pass self- and lapse-support testing, the minimum and maximum values shown in 7.B would be affected. For example, if a BIA used a 12% cap that under 4.A produced a 6.8% maximum illustrated rate and the company either chose or through testing lowered the maximum illustrated rate to 6.5%, the calculation under 4.A and the table for 7.B would not be changed. If a company lowered the 12% BIA cap to 11% for the BIA, then 4.A would use the 11% cap and 7.B would reflect the rates calculated using the 11% cap.

Some actuaries that find the maximum BIA self- and lapse-supportable cap is lower than a company's declared cap would use the self- and lapse-supportable cap in the calculations under 4.A, then show the maximum and minimum values of that calculation in the 7.B table. For example, if a company declared a 12% cap but self- and lapse-support testing indicated a lower cap of 11% is necessary to pass testing, some actuaries would reflect the 11% cap in the 4.A calculations and 7.B table rather than the 12% cap declared by the company.

Q 4.24: What investment return assumptions are actuaries using in the self- and lapse-support tests for IUL?

Pertinent Section of the ASOP:

Section 3.4.1(a) *Investment Return—The* ***experience factor*** *used for investment income (the investment return factor) 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.*

If interest credits are linked to an external index or indices, then the investment return factor is sensitive to business or economic cycles. In such cases, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index or indices in determining recent ***actual experience****. When determining the investment return factor for policies within the scope of AG 49, actuaries should comply with limitations imposed on the assumed earned interest rate underlying the* ***disciplined current scale****.*

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.*

Pertinent Sections of AG 49:

Section 5.A *If an insurer engages in a hedging program for index-based interest, the assumed earned interest rate underlying the disciplined current scale shall not exceed 145% of the annual net investment earnings rate (gross portfolio earnings less provisions for investment expenses and default costs) of the general account assets (excluding hedges for index-based credits) allocated to support the policy.*

Section 5.C *These experience limitations shall be included when testing for self-support and lapse-support under Model Regulation #582, accounting for all benefits including illustrated bonuses.*

Pertinent Sections of AG 49-A:

Section 5.A *If an insurer engages in a hedging program for Indexed Credits in an account, the assumed earned interest rate underlying the disciplined current scale for that account, inclusive of all general account assets, both hedge and non-hedge assets, that support the policy, net of default costs and investment expenses (including*

the amount spent to generate the Indexed Credits of the policy) shall not exceed the lesser of (i) and (ii):

i. the Annual Net Investment Earnings Rate, plus 45% of the lesser of (1) and (2):

1. Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget.

2. The minimum of the Annual Net Investment Earnings Rate and the Hedge Budget that is used in the determination of the Benchmark Index Account.

ii. the Annual Rate of Indexed Credits plus the Annual Net Investment Earnings Rate minus the Hedge Budget

These rates should be adjusted for timing differences in the hedge cash flows to ensure that fixed interest is not earned on the Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget

***Section 5.C** These experience limitations shall be included when testing for self-support and lapse-support under Model Regulation #582, accounting for all illustrated benefits including any illustrated benefits and bonuses that impact the policy's account value.*

A. As stated in the beginning of section 3.4.1(a) of the ASOP, 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 any hedge assets in a hedging program for indexed based interest or indexed credits, 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 in determining recent actual experience. Hedge costs may be highly sensitive to business or economic cycles as well. Many actuaries, in determining the hedge costs used in the self- and lapse-support tests, reflect the actual hedge costs supporting the index linked product features. Many actuaries would give recognition to recent market conditions. Some actuaries also take into account long-term hedge costs that would be considered reasonable over the testing period. 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. On the other hand, if deterioration of the hedge cost assumptions are expected, less favorable assumptions are allowable.

Some actuaries may use a simplified approach if the hedge is assumed to essentially match the product index-linked crediting. Investment returns from the hedge assets would offset the index-linked interest crediting that the hedge assets are intended to hedge. Therefore, the investment return would be the combination of the hedge return and the return on the other assets. These investment returns would then be subject to the limits in Section 5 of the AGs.

As required by section 3.10 of the ASOP, the actuary should document the description and rationale for the assumptions.

Q 4.25: Can excess investment gains from policies lapsing prior to receipt of the index credit be included in the investment return assumption when performing the self- and lapse-support tests?

Pertinent Section of the ASOP:

> ***Section 3.4.1(a)*** *Investment Return—The* ***experience factor*** *used for investment income (the investment return factor) 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.*
>
> *If interest credits are linked to an external index or indices, then the investment return factor is sensitive to business or economic cycles. In such cases, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index or indices in determining recent* ***actual experience****. When determining the investment return factor for policies within the scope of AG 49, actuaries should comply with limitations imposed on the assumed earned interest rate underlying the* ***disciplined current scale****.*
>
> *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. Nothing in the ASOP, the Model, or the AGs specifically prohibits this practice. Many actuaries reflect excess investment gains due to policyholders lapsing prior to receipt of the index credit by including the gain in the cash flow in the model and not directly in the investment return assumption.

Another way to reflect excess investment gains from off-anniversary surrenders in modeling 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. Note, after year five in the lapse-support test, such gains will be eliminated due to the assumption that there will be no surrenders. Many actuaries consider the possibility that off-anniversary surrenders may occur disproportionately due to unfavorable index performance. If surrender gains are included in the model as part of the investment return assumption, many actuaries would remove the surrender gains from the investment return

assumption to demonstrate compliance with the limitations on the earned rate underlying the disciplined current scale and document the assumptions and rationale.

Q 4.26: When would it be appropriate to update the illustrated rate?

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 3.4.2 *... The actuary should reflect changes in experience 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.

Pertinent Section of AG 49:

Section 4.D *At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).*

Pertinent Section of AG 49-A:

Section 4.D *… At the beginning of each calendar year, the insurer shall be allowed up to three (3) months to update the credited rate for each Index Account in accordance with 4 (B) and 4 (C).*

A. The illustrated rate should satisfy the requirements of the Model, the ASOP, and the AGs at all points in time. Depending on the changes that occur in the assumptions underlying the disciplined current scale, including assumptions for hedge costs and investment returns, many 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.

Q 4.27: If an index-linked product offers multiple index accounts, how many illustrated rates are needed?

Pertinent Section of the ASOP:

Section 3.5 *… When 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 and subject to the limitations of AG 49, 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 toward any portions of the business that do not meet the self-support test in their own right.*

When performing the self-support test on policy forms with 1) interest credits linked to an external index or indices and 2) more than one available indexed account, actuaries must comply with the limitations on aggregation of indexed accounts imposed by AG 49, if applicable.…

Pertinent Section of AG 49:

Section 3.B.vi *Account charges, if applicable, do not exceed the account charges for any other corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy's Index Accounts, subject to the requirements of 5.D. However, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account.*

Section 4.A

i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).

ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

Section 5.D *If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582,*

subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.

Pertinent Section of AG 49-A:

Section 3.B.ix *A single Benchmark Index Account will be determined for each policy. This can be either an Index Account offered with the illustrated policy or determined according to Section 4 (A) (ii) for purposes of complying with this guideline. A policy shall have no more than one Benchmark Index Account.*

Section 4 *Illustrated Scale*

The total Annual Rate of Indexed Credits for the illustrated scale for each Index Account shall be limited as follows:

A. Calculate the geometric average annual credited rate for the Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.

i. If the insurer offers a Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).

ii. If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

B. For the Benchmark Index Account the Annual Rate of Indexed Credits shall not exceed the minimum of (i) and (ii):

i. the arithmetic mean of the geometric average annual credited rates calculated in 4 (A).

ii. 145% of the Annual Net Investment Earnings Rate.

C. For any other Index Account that is not the Benchmark Index Account in 3 (CD), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.

ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.

D. For the purposes of compliance with Section 6 (C) of Model #582, the Supplemental Hedge Budget is subtracted from the Annual Rate of Indexed Credits before comparing to the earned interest rate underlying the disciplined current scale

Section 5 *Disciplined Current Scale*

The earned interest rate for the disciplined current scale shall be limited as follows:

A. If an insurer engages in a hedging program for Indexed Credits in an account, the assumed earned interest rate underlying the disciplined current scale for that account, inclusive of all general account assets, both hedge and non-hedge assets, that support the policy, net of default costs and investment expenses (including the amount spent to generate the Indexed Credits of the policy) shall not exceed the lesser of (i) and (ii):

i. the Annual Net Investment Earnings Rate, plus 45% of the lesser of (1) and (2):

1. Hedge Budget minus any annual floor, to the extent that the floor is supported by the Hedge Budget.

2. The minimum of the Annual Net Investment Earnings Rate and the Hedge Budget that is used in the determination of the Benchmark Index Account.

ii. the Annual Rate of Indexed Credits plus the Annual Net Investment Earnings Rate minus the Hedge Budget.

C. These experience limitations shall be included when testing for self-support and lapse-support under Model #582, accounting for all illustrated benefits including any illustrated benefits and bonuses that impact the policy's account value.

A. Under both AGs, many actuaries would derive a separate illustrated rate for each index account subject to the maximum illustrated rate associated with the BIA for the index account. If the policyholder allocates premium and/or fund value across multiple accounts, some actuaries blend the illustrated rate according to this allocation. Like other distribution of business assumptions, the self- and lapse-support tests may reflect an expected blend across accounts. As per section 3.5 of the ASOP, to the extent there is subsidization across accounts (i.e., certain accounts do not pass the self- and lapse-support tests), many actuaries recognize possible shifts in distribution when determining the distribution assumption. However, subsidization is limited under Section 5.D of AG 49 because each set of Index Accounts that correspond to each Benchmark Index Account must be tested independently. Note, multiple BIAs cannot exist under AG 49-A, thus all accounts within the policy can be tested in aggregate.

Q 4.28: How do I develop the hedge budget as a percentage of the account value under 3.F of AG 49-A?

Pertinent Sections of AG 49-A:

Background *In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

Section 3.D.vi *… The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.*

Section 3.F*: Hedge Budget: For each Index Account, the total annualized amount assumed to be used to generate the Indexed Credits of the account, expressed as a percent of the account value in the Index Account. This total annualized amount should be consistent with the hedging program of the company*.

A. If the company uses a percentage of the account value in the Index Account approach for setting the hedge budget, many actuaries would use that percentage as long as they believe it is consistent with the hedging program of the company. If the percentage is not consistent with the hedging program, many actuaries would develop a percentage that is consistent with the hedging program.

If the company does not use a percentage approach for setting the hedge budget, for example, when all of the hedge budget is determined based on non-asset-based charges, many actuaries would divide the total dollar amount reasonably expected to be used to purchase hedges for each indexed account by the account value of each indexed account to determine the percentage. When a portion of the hedge budget is determined based on non-asset-based charges, many actuaries would divide the total amount of non-asset-based charges by the total indexed account value and add this percentage to the asset-based charges supporting the total hedge budget to determine the total hedge budget percentage as long as they believe the resulting total hedge budget percentage is consistent with the hedging program of the company.

For the BIA, the resulting percentages of indexed account value are then subject to the restrictions contained in AG 49-A.

Q 4.29: Could I implement AG 49-A based on product—i.e., move a product that is being issued today to AG 49-A and include new and prior to December 14, 2020, issues, but keep products no longer issuing new business still on AG 49?

Pertinent Sections AG 49:
Section 1.iv. This actuarial guideline shall not apply for any new business or in force life insurance illustrations on policies sold on or after December 14, 2020.

Section 1.v. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies issued prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all product

illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.

Pertinent Section of AG 49-A:

Section 1. This Actuarial Guideline shall be effective for all new business and in force illustrations on policies sold on or after December 14, 2020.

A. The application of AG 49-A or AG 49 guidance is determined by issue date, not policy form or product. However, some actuaries have determined that complying with AG 49-A would also comply with AG 49 in many cases, especially when AG 49-A illustrations are less favorable than AG 49. If the actuary determines that a scale meeting AG 49-A requirements passes AG 49 testing requirements, a product may be able to illustrate AG 49-A type illustrations under AG 49 without specifically declaring the desire to move to AG 49-A for policies sold before Dec. 14, 2020, or move all policies to AG 49-A.

Q 4.30: How do I determine the BIA hedge budget?

Pertinent Section of AG 49:

Section 3.B vi. Account charges do not exceed the account charges for any corresponding Index Accounts within the policy in any policy year. If Index Accounts with different levels of account charges are offered with the illustrated policy, more than one Benchmark Index Account may be used in determining the maximum illustrated crediting rates for the policy's Index Accounts, subject to the requirements of 5.D.. However, for each Index Account within the policy, only one Benchmark Index Account shall apply. Any rate calculated in 4 (B) shall not apply for an Index Account if the account charges for the applicable Benchmark Index Account exceed the account charges for that Index Account in any policy year. Account charges include all charges applicable to an Index Account, whether deducted from policy values or from premiums or other amounts transferred into such Index Account. Section 4.A.ii If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).

Pertinent Sections of AG 49-A:

Background *In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

Section 3.B: Annual Net Investment Earnings Rate: Gross portfolio annual earnings rate of the general account assets (excluding hedge assets for Indexed Credits), less provisions for investment expenses and default cost, allocated to support the policy. Charges of any kind cannot be used to increase the Annual Net Investment Earnings Rate.

Section 3.D.: Benchmark Index Account
ii: An annual cap is used in the interest calculation
vi: The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.

Section 3.F: Hedge Budget: For each Index Account, the total annualized amount assumed to be used to generate the Indexed Credits of the account, expressed as a percent of the account value in the Index Account. This total annualized amount should be consistent with the hedging program of the company.

Section 4.A.ii If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

A. Under AG 49, many actuaries look to the actual hedge budget for the indexed account to determine the hedge budget for the BIA. If different levels of account charges exist between indexed accounts, AG 49 allows for multiple BIAs to exist, up to one per each indexed account. Each hedge budget could be used to develop the BIA hedge budget.

Under AG 49-A, only one BIA may exist. If the policy has an account that meets the definition of a BIA, then the hedge budget for the BIA is the hedge budget for that account. If the policy does not have an account that meets the definition of a BIA, many actuaries would determine how much of a cap can be afforded by the hedge budget consistent with the hedge program of the company if a hypothetical index account meeting the definition of a BIA existed. Thus, 3.D.vi and 3.F taken together results in the BIA hedge budget being the lesser of the Annual Net Investment Earnings rate or the actual hedge budget used by the company.

For example, under AG 49, say a policy had an earned rate of 4.5%, and had two indexed accounts, one with a 10% cap, and one with a higher level of charges to allow for a 12% cap, with both accounts meeting the definition of a BIA. The hedge budget for the account that has the lower level of charges might have a hedge budget less than or equal to the earned rate for that BIA, while the account with the higher level of charges might have a hedge budget higher than the earned rate for that BIA.

On the other hand, under AG 49-A, the above policy would have only one indexed account that met the definition of a BIA (the one with the 10% cap) and the hedge budget for the BIA would be consistent with the hedge budget for that account. This BIA would be applicable for all indexed accounts in the policy.

Under either AG, there might not be any indexed account that meets the definition of a BIA. Under both AGs, actuaries use actuarial judgment to develop a hypothetical hedge budget that would be used to purchase a hypothetical supportable cap on the hypothetical indexed account that meets the definition of a BIA. Under AG 49-A, a hedge budget consistent with the hedging program of the company (up to the Annual Net Investment Earnings Rate) should be used in determining the single BIA applicable to all indexed accounts in the policy. AG 49 does not have the specific ANIER limit on the hedge budget used for the BIA.

Q 4.31: When doing calculations under Section 4 of AG 49, it seems products with similar index account parameters would have similar BIAs and thus a similar maximum illustrated credited rate from Section 4. When doing calculations under Section 4 of AG 49-A, it seems products with similar account parameters may not end up with similar BIAs, and therefore not have similar maximum illustrated credited rates under Section 4. Am I interpreting this correctly?

Pertinent Sections of AG 49:

> ***Section 4.A****. Calculate the geometric average annual credited rate for each applicable Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.*
>
> *i. If the insurer offers an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the applicable Benchmark Index Account in 4 (A).*
>
> *ii. If the insurer does not offer an applicable Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of a Benchmark Index Account, and shall use that cap in 4 (A).*
>
> *B. For each applicable Benchmark Index Account, the arithmetic mean of the geometric average annual credited rates calculated in 4 (A) shall be the maximum credited rate(s) for the illustrated scale.*
>
> *C. For other Index Accounts using other equity, bond, and/or commodity indexes, and/or using other crediting methods, the illustration actuary shall use actuarial judgment to determine the maximum credited rate for the illustrated scale. The determination shall reflect the fundamental characteristics of the Index Account and the parameters shall have the appropriate relationship to the expected risk and return of the applicable Benchmark Index Account. In no event shall the credited rate for the illustrated scale exceed the applicable rate calculated in 4 (B).*

Pertinent Sections of AG 49-A

Section 4.A*. Calculate the geometric average annual credited rate for the Benchmark Index Account for the 25-year period starting on 12/31 of the calendar year that is 66 years prior to the current calendar year (e.g., 12/31/1949 for 2015 illustrations) and for each 25-year period starting on each subsequent trading day thereafter, ending with the 25-year period that ends on 12/31 of the prior calendar year.*

i. If the insurer offers a Benchmark Index Account with the illustrated policy, the illustration actuary shall use the current annual cap for the Benchmark Index Account in 4 (A).

ii. If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).

B. For the Benchmark Index Account the Annual Rate of Indexed Credits shall not exceed the minimum of (i) and (ii):

i. the arithmetic mean of the geometric average annual credited rates calculated in 4 (A).

ii. 145% of the Annual Net Investment Earnings Rate.

C. For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.

ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate

A. Yes. Under AG 49, products that have similar index features and similar BIAs would more likely have similar maximum illustrated rates as calculated under Section 4. Under AG 49-A, products with similar index parameters may not have similar BIAs and may not have similar maximum illustrated credited rates under Section 4. AG 49-A Section 4 places additional restrictions on the Annual Net Investment Earnings Rate, different hedge budgets, or other product features. Products with similar account features and similar BIA under both AG 49 and AG 49-A will also not necessarily have the same maximum illustrated credited rate due to additional restrictions under AG 49-A. Note that the final maximum illustrated credited rate is subject to self-support and lapse support testing and limitations under Section 5 of the AGs.

Q 4.32: In the certification, companies must disclose "If nonguaranteed elements illustrated for new policies are not consistent with those illustrated for similar in force policies." Given the fact that AG 49-A does not apply to policies sold before

Dec. 14, 2020, will I have to disclose a difference in the nonguaranteed elements illustrated?

Pertinent Section of the Model:

> ***Section 11.C.5:*** *Disclose in the annual certification whether, since the last certification, a currently payable scale applicable for business issued within the previous five (5) years and within the scope of the certification has been reduced for reasons other than changes in the experience factors underlying the disciplined current scale. If nonguaranteed elements illustrated for new policies are not consistent with those illustrated for similar in force policies, this must be disclosed in the annual certification. If nonguaranteed elements illustrated for both new and in force policies are not consistent with the nonguaranteed elements actually being paid, charged or credited to the same or similar forms, this must be disclosed in the annual certification …*

A.

The answer depends upon what the illustration actuary considers to be the illustrated nonguaranteed elements. For example, consider an illustration that shows an annual rate of indexed credits of 7.25% under AG 49, but the exact same policy now illustrates an annual rate of indexed credits of 6.75% under AG 49-A. Many actuaries may not view the change in the illustrated annual rate of indexed credits as a change in illustrated nonguaranteed elements if no policy cap rates, participation rates, multipliers, or other index-linked enhancements to illustrated policy values changed between AG 49 and AG 49-A. Some actuaries may view the illustrated annual rate of indexed credits as an illustrated nonguaranteed element and may view the change in the illustrated rate as an inconsistency between illustrated nonguaranteed elements for similar policies.

If AG 49-A impacted the ability to pass self- or lapse-support testing, and the policy index parameters underlying the illustration did need to change under AG 49-A (say the cap rate for the disciplined current scale moved from 10% to 9%), many actuaries would disclose the difference as an inconsistency in the illustrated nonguaranteed elements.

Q 4.33: Should the hedge costs used to set the BIA cap be based on current hedge costs or some average?

Pertinent Section of the ASOP:

> ***Section 3.4.1.a*** *Investment Return—The experience factor used for investment income (the investment return factor) 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.*
>
> *If interest credits are linked to an external index or indices, then the investment return factor is sensitive to business or economic cycles. In such cases, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index or indices in determining recent actual experience. When determining the investment return factor for policies within the*

scope of AG 49, actuaries should comply with limitations imposed on the assumed earned interest rate underlying the disciplined current scale.

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.

Pertinent Sections of AG 49-A:

***Background** In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

***Section 3.D.vi**. The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.*

***Section 3.F**. Hedge Budget: For each Index Account, the total annualized amount assumed to be used to generate the Indexed Credits of the account, expressed as a percent of the account value in the Index Account. This total annualized amount should be consistent with the hedging program of the company.*

A. Many actuaries would consider using an average hedge cost to account for the daily fluctuations in the hedge cost. Many actuaries would consider using an average consistent with how costs are sensitive to business or economic cycles and the hedging program of the company. Many actuaries would consider, for example through sensitivity testing, how variations in the hedge cost would impact the ability to certify the illustrated scale or could require changes in the illustrated scale.

Q 4.34: How do I test a product/policy form that has some policies that fall under AG 49 and some policies under AG 49-A? Do I need to treat them separately or can they be tested together?

Pertinent Section of the Model:

***Section 4.O.** "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. For this purpose, policy owner value will include cash surrender values and any other illustrated benefit amounts available at the policy owner's election

Pertinent Sections of AG 49:

***Section 1.v**. Notwithstanding part iv of this section, an insurer may choose to utilize AG-49A guidance for new illustrations on policies issued prior to the effective date of AG49A provided that, one, the insurer utilizes AG-49A guidance for all product illustrations subject to AG49, and, two, the insurer does not revert back to the AG-49 guidance.*

***Section 5.D**. If more than one Benchmark Index Account is used for an illustrated policy, each set of Index Accounts that correspond to each Benchmark Index Account must independently pass the self-support and lapse-support tests under Model #582, subject to the limitations in 5 (A), (B), and (C). All experience assumptions that do not directly relate to the Index Accounts as to expenses, mortality, investment earnings rate of the general account assets, lapses, and election of any Fixed Account shall equal the assumptions used in the testing for the entire policy.*

Pertinent Section of AG 49-A:

***Section 5.A** For a policy with multiple Index Accounts, a maximum rate in 5.(A). should be calculated for each account. All accounts, fixed and indexed, within a policy can be tested in aggregate.*

A. Some actuaries treat policies that fall under AG 49-A as a new block of policies and test that block of policies on a stand-alone basis, separate from the block of policies that fall under AG 49. Some actuaries may then aggregate the results to determine if the policy form passes in total, unless limited under AG 49 Section 5.D. Many actuaries would generally consider if a different ANIER or different illustrated values apply to the AG 49 block versus the AG 49-A block. Also, other assumptions may need to be considered for reasonable differences between the policy blocks when treating these policies as separate blocks. Many actuaries would document any differences in assumptions between the blocks. This may cause different disciplined current scales between the AG 49 policies and the AG 49-A policies and require separate testing for the different blocks. Assumptions need to be appropriate for each group of policies being tested for each applicable AG.

Alternatively, if the insurer has chosen to utilize AG 49-A guidance for new illustrations on policies issued prior to the effective date of AG 49-A and meets the requirements of AG 49 Section 1.v, then many actuaries would test all the policies on the policy form together as a single block.

Q 4.35: Under AG 49-A, if I have an account with a hedge budget less than the ANIER, do I need to use the hedge budget as the hedge budget for the BIA even though the account does not meet the definition of a BIA?

Pertinent Sections of AG 49-A:

Background *In 2019, the NAIC decided that illustrations of products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features.*

Section 3.D. *Benchmark Index Account: An Index Account with the following features:*

i. The interest calculation is based on the percent change in S&P 500® Index value only, over a one-year period using only the beginning and ending index values. (S&P 500® Index ticker: SPX)
ii. An annual cap is used in the interest calculation.
iii. The annual floor used in the interest calculation shall be 0%.
iv. The participation rate used in the interest calculation shall be 100%.
v. Interest is credited once per year.
vi. The Hedge Budget used to determine the cap in 3 (D) (ii) does not exceed the Annual Net Investment Earnings Rate. Charges of any kind cannot be used to increase the annual cap.
vii. There are no enhancements or similar features that provide additional Indexed Credits in excess of the interest provided by 3 (D) (i) through 3 (D) (v), including but not limited to experience refunds, multipliers, or bonuses.

Section 4.A.ii *If the insurer does not offer a Benchmark Index Account with the illustrated policy, the illustration actuary shall use actuarial judgment to determine a hypothetical, supportable current annual cap for a hypothetical, supportable Index Account that meets the definition of the Benchmark Index Account, and shall use that cap in 4 (A).*

Section 4.C*. For any other Index Account that is not the Benchmark Index Account in 3 (D), the Annual Rate of Indexed Credits illustrated as a percentage of the account value in the Index Account prior to the deduction of any charges used to fund a Supplemental Hedge Budget shall not exceed the minimum of (i) and (ii):*

i. The Annual Rate of Indexed Credits for the Benchmark Index Account calculated in 4 (B) plus the Supplemental Hedge Budget for the Index Account.
ii. The Annual Rate of Indexed Credits reflecting the fundamental characteristics of the Index Account and the appropriate relationship to the expected risk and return of the Benchmark Index Account. The illustration actuary shall use actuarial judgment to determine this value using lookback methodology consistent with 4 (A) and 4 (B) (i) where appropriate.

A. Many actuaries would use the hedge budget of the non-BIA and determine what the same hedge budget would have bought if the parameters for the account met the definition of a BIA. Some actuaries use actuarial judgment to adjust the hedge budget to what would have been used if a BIA were offered. Some actuaries may use the NIER as the hedge budget for the hypothetical BIA when the actuary determines that doing so may be consistent with the hedging program of the company. This hypothetical BIA, the

145% limit, and the lookback using the actual parameters of the non-BIA are all taken into account when determining the maximum illustrated rate.

If charges were used to increase the hedge budget for the non-BIA, many actuaries would consider the pertinent sections of AG 49-A (including the general objective that products with multipliers, cap buy-ups, and other enhancements that are linked to an index or indices should not illustrate better than products without such features) in determining the hedge budget for a BIA per AG 49-A.

5. Mortality

Q 5.1: The company recently switched from nonsmoker/smoker to nontobacco/tobacco user but does not have any mortality experience with the new classes. Do companies test the business by splitting the insureds into three groups and testing as follows?

a) Nontobacco 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 *… When 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 and subject to the limitations of AG 49, 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. When determining the extent to which* ***actual experience*** *is credible, the actuary should refer to ASOP No. 25, Credibility Procedures. 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. 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, many actuaries would consider using the former nonsmoker mortality assumption for testing non-tobacco users and nonsmoking tobacco users in the aggregate, when the introductions of the new classifications is expected to result in the same overall nonsmoker mortality.

The smoker classification in this example is unchanged, so many actuaries would continue to test this class with the smoking mortality assumption.

In other cases, a redefinition of underwriting classes may be expected to change the distribution of risks covered, effectively changing the expected level of aggregate mortality. many actuaries reflect such expectations in the distribution and mortality assumptions underlying the DCS, provided the actions leading to the expected change in experience have already taken place.

Q 5.2: When (1) underwriting requirements are changed, or (2) new underwriting classes are added, how should the effect on future mortality be determined?

Pertinent Sections of the 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****. 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. When determining the extent to which* ***actual experience*** *is credible, the actuary should refer to ASOP No. 25, Credibility Procedures. 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 3.4.1(b)*** *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 *… When 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 and subject to the limitations of AG 49, 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 any changes, such as the following, to the extent known to the actuary:*

a. a change in underwriting standards, such as introducing preferred risk, guaranteed issue, or simplified underwriting; …

In order to be reflected in the ***disciplined current scale****, such changes should have already been made 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 Section 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. Many 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.
- Many actuaries base the experience factors on the credible insurer mortality experience adjusted for risk class if underwriting requirements have changed and there is credible insurer experience to suggest how much aggregate mortality might change.
- If credible insurer experience data is lacking on the revised underwriting but in the actuary's professional judgment mortality experience will change, then many actuaries will 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.

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

6. Investment Income Allocation

Q 6.1: 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* ***experience factor*** *used for investment income (the investment return factor) 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 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 generation or new money 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 the company's nonguaranteed element framework. For example, they could reflect the company practices for determination of interest crediting rates.

Q 6.2: Some companies allocate earnings on assets held in surplus lines of business. 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.*
> *…. 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. If a company has a corporate line of business and allocates certain investment earnings from surplus to the corporate line, there are at least two practices that an actuary might follow. Some actuaries may exclude these earnings from the investment return factor. Other actuaries may include the earnings allocated from the corporate segment.

According to the ASOP, the method of allocating earnings should use the same method that is used to allocate investment income to policies, consistent with the company's nonguaranteed element framework.

With no corporate line of business, the question becomes more complicated, and the documentation typically becomes more important. If a 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. Again, according to the ASOP, the method of allocating earnings should use the same method that is used to allocate investment income to policies, consistent with the company's nonguaranteed element framework.

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

7. Expenses

Q 7.1: How are direct expenses and indirect expenses defined?

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….*

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 defined specifically in the ASOP. For purposes of developing a DCS, an 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 in that they are specifically related to a particular policy form. 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. Section 3.10 of the ASOP describes how the actuary should document the methodology used.

Q 7.2: 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 *… 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…*

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

Q 7.3: 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 often will experience increased expenses. These expenses may be overhead expenses, but they also could 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.

Q 7.4: 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 once changes have been determined to be significant and ongoing….*

A. One-time expenses that are significant and ongoing (e.g., systems development costs) are required to be included by the ASOP in determining allocable expenses, but they may be spread over a reasonable number of years. Some actuaries might conclude that expenses that are extraordinary and are not expected to be ongoing may be excluded when developing fully allocated expense factors. Other actuaries might exclude those expenses for future policy durations but include these expenses in past policy durations where an expense did occur. Some actuaries would include them in all durations. Within this broad limitation, an actuary may exercise judgment in determining how one-time costs are reflected. As per Section 3.10, the documentation should reflect the description of and rationale for the assumption.

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.

Q 7.5: What flexibility does an actuary have in determining an 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 *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 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.

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.

Some actuaries decide to use marginally allocated expenses or the GRET Table for all policy forms for the certification year. If marginally allocated expenses are used as

permitted by the Model, 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.

Q 7.6: Are indirect expenses 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. Some actuaries 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 actuaries document that expenses were allocated appropriately is to use the expense allocations that are actually used in financial statements of the company (e.g., statutory, GAAP or other management reporting) and are consistent with the company's nonguaranteed element framework. While other methods of allocation also may 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).

Q 7.7: 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 a 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 also might 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.

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.

Q 7.8: 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, an 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 also may be possible.

One way to document that expenses were allocated appropriately would be to use the full expense allocations that actually are 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.

Q 7.9: 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 an 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 actuary should recognize any such deterioration in the DCS assumption.

The ASOP does not explicitly address whether or how to reflect the effects of inflation after the effective date of the scale in establishing the DCS expense assumptions. Note that the DCS expense assumptions may differ from the assumptions actually used to establish the nonguaranteed elements.

8. GRET

Q 8.1: 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?

Pertinent Section of the ASOP:

Section 3.4.1(e)(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….*

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. When calculating unit expenses, the actuary should select average policy size and volume of sales assumptions that are appropriate for the policy form.

A. The GRET factors for different distribution systems are derived from data for companies that are predominantly 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 possible there will be future refinements related to the expense factors by distribution system. Some of the current practices are 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.

Q 8.2: When using the GRET, are the approved GRET unit factors used 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.*

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;

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. Some actuaries are comfortable 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 believe it to be appropriate to consider deviations from the GRET for certain forms of coverage, say term vs. permanent. Many actuaries document the use and rationale for this approach to ensure that any deviations have a reasonable basis and are consistent with a company's nonguaranteed framework.

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, actuaries use the appropriate GRET factors for all other distribution systems.

Q 8.3: 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 percent?

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 percent adjustment would likely be applicable and consistent with the 2001 and earlier methodology.

The use of a 6 percent 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 that 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, many 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 percent multiplier and the percent of premium expense factor.

Q 8.4: 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 that 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). As required in the ASOP Section 3.10, the documentation should include a description of and rationale for the expense factors used.

Consistent with the method that is currently used to develop the GRET, the 6 percent 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.

Q 8.5: 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 that 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.

Q 8.6: 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 once changes have been determined to be significant and ongoing.*

A. The effect 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. Therefore, an 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 expense 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 effect 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 and this is the only change, many actuaries believe any DCS determined using the old GRET is still compliant through the end of the certification year.

Since the Model and the ASOP are not specific about how to apply GRET tables, many actuaries would document the basis for the expense assumption used.

9. Federal Income Taxes

Q 9.1: 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 states that the actuary should 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. Some actuaries believe this is permitted by the ASOP, provided these methods recognize the impact of income taxes by duration.

Q 9.2: 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 ASOP No. 24 (December 1995) that dealt with taxes stated in effect that the mutual company add-on tax may be omitted in computing the self-support test. However, when that reference was eliminated from the ASOP, the April 2006 Transmittal

Memorandum that accompanied that exposure draft 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. In addition, the answer to Question 11.12 in the NAIC Question and Answers document to the Life Illustrations Model Regulation (dated March 19, 1997) includes 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. Using a simplified approach for this tax, rather than a more detailed approach that would take into account the effect of the tax by duration, is also a current practice.

Q 9.3: 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.

10. Disciplined Current Scale

Q 10.1: 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 2.2*** *Currently Payable Scale—A scale of* ***nonguaranteed elements*** *in effect for a policy form as of the preparation date of the illustration or declared to become effective within the next 95 days.*
>
> ***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. Many actuaries begin by testing the currently payable scale to confirm that it meets the requirements of a DCS. If so, many actuaries would then set the DCS equal to the currently payable scale and consider this to represent satisfactory completion of testing.

If the currently payable scale does not meet the requirements of a DCS, adjustments and iterative testing will be necessary to find a scale that meets the requirements of a disciplined current scale. More than one scale may meet the requirements of a disciplined current scale, so many actuaries apply the tests to different patterns of nonguaranteed elements before choosing a disciplined current scale that meets the requirements of the Model, the ASOP, and AG49.

An actuary may want to refer to the Model and any other applicable regulations and standards of practice (for example, ASOP No. 2 and ASOP No. 15) for additional guidance regarding the determination and communication of nonguaranteed elements.

Q 10.2: 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. 2, 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 Requirements—The actuary should ensure that the* ***illustrated scale*** *meets the requirements imposed by the Model as follows.*

*3.3.1 Currently Payable Scale—The **illustrated scale** must not be more favorable to the policyholder than the **currently payable scale** at any duration.*
*3.3.2 Disciplined Current Scale—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. 2 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, many actuaries believe neither the Model nor any ASOP 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, an 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 does not 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.

Q 10.3 : 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.*

***Section 3.4.2** ... The actuary should reflect changes in experience 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. Many actuaries believe nothing in the ASOP prevents 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.

Many actuaries consider certifications as applying to all illustrated scales in use at the time of the certification and all scales used since the prior certification. This understanding of the certification would allow the actuary to certify that at the current time and since the prior certification that the scales illustrated meet the requirements in the Model. Complying during the period between certifications may necessitate the DCS to be changed more than annually to meet the requirements of the regulation and/or require sensitivity tests to understand particular points where the scale may fail before the next certification so that action can be taken to keep the DCS in compliance.

Many 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.

Q 10.4: How do the Model and the 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 6.B *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 4.O *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 4.C *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. Many actuaries feel the ASOP and Model do not provide any exception or variation for this type of product. If the policy form passes the self-support and lapse-support tests then the illustration actuary will 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 nonguaranteed 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 passes the self-support and lapse-support tests. Alternatively, a company may elect to notify the insurance commissioner that it will 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, distributions of surplus could be used when preparing the testing for these in-force policies if the illustration actuary can demonstrate that inclusion meets the applicable requirements in the ASOP.

11. Similar Products and Policy Forms

Q 11.1: 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 experienc****e 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 also may 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.

Q 11.2: 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….*
>
> *When 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 and subject to the limitations of AG 49, 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 information as to what is considered a "policy form." From a regulatory perspective, many 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. Some actuaries believe that cases can be aggregated if the differences could be characterized as differences in underwriting classification and/or policyholder choice factors. As stated in the penultimate paragraph of Section 3.5, "possible shifts in distribution toward any portions of the business that do not meet the tests in their own right" (among cases, in this instance) should be appropriately reflected in the assumptions used in performing the tests.

Q 11.3: 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*** *... When 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 and subject to the limitations of AG 49, 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, an actuary "should select assumptions for the distribution between underwriting classes and policyholder choices" 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.

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

12. Riders

Q 12.1: 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.*
>
> *When 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 and subject to the limitations of AG 49, 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, many actuaries believe they would not 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 often would 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 potential material cost. Policy split option riders, certain accelerated death benefit riders, and insurance-exchange riders may be examples of such riders. Many actuaries feel it is useful to document the rationale for inclusion or exclusion of riders.

13. Self-Support and Lapse-Support Testing

Q 13.1: 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. Many actuaries consider an asset share to be the accumulation of cash flows. ASOP No.7 defines a "cash flow" as "any receipt, disbursement, or transfer of cash." Many actuaries use the term "cash flow" consistently with ASOP No. 7, and increases and decreases in reserves are not defined as cash flows. Many actuaries take into account that reserves could affect some cash flow items, such as taxes. Many actuaries believe the assumptions used to determine the cash flows for an asset share under ASOP No. 7 are 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.

Q 13.2: 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 a company's ability and intent to continue this practice for the foreseeable future.

Many actuaries believe the ASOP does not describe any similar permission or exception to use allocated earnings on surplus for new business self-support or lapse-support testing as new business would not have accumulated surplus or prior gains. The self-support test is defined in the Model to be the accumulation of the policy cash flows.

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 the ASOP require disclosure of the inconsistency.

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

Q 13.3: 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 persistency rates underlying the* ***disciplined current scale*** *for the first five policy years and 100% policy persistency thereafter. In performing the lapse-support test for a policy form, the actuary should assume that benefits that are conditional only upon policy continuation will be provided to all policies in-force at the end of year five and*

surviving to the date of such benefits. For policy forms that provide benefits that are conditional upon certain premium payment patterns, the actuary should consider whether all policies in-force to the end of year five will qualify for such benefits ….

A. When performing the self-support and lapse-support tests, many actuaries would model projected benefits and bonuses as those that would be paid per the product mechanics, given the premium payment patterns used in the model.

In determining what premium payment patterns to use in the self-support and lapse-support tests, many actuaries would consider planned premium, historical paid premiums, and market focus as key factors. In instances where past premiums and/or projected future premiums would cause certain policies to be ineligible for future benefits or bonuses that they could still become eligible for given an alternate future premium pattern, many actuaries would consider testing the effect that alternate premium patterns would have on results. If testing results could be affected adversely by alternate future premium patterns, many actuaries would consider adjusting the future premium pattern assumptions, especially if those patterns reasonably could be expected to be paid by policyholders.

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 conditional benefits and will never be able to become qualified in the future. Thus, these policies no longer include the conditional benefit feature and the test need not be constructed so that they would qualify for the conditional benefit in the future. If the policy has such conditional benefits, some actuaries also perform a lapse-support test using the self-support test expected premium payment pattern, substituting 100 percent persistency 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.

Q 13.4: What practices are utilized by actuaries to recognize "shifts in distribution toward any portions of the business that do not meet the self-support test in their own right," in accordance with section 3.5 of the ASOP?

Pertinent Section of the ASOP:

Section 3.5 *… When 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 and subject to the limitations of AG 49, 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 recognize possible shifts in distribution toward any portions of the business that are not self-supporting in their own right. Some actuaries would examine historical data to determine what shifts reasonably could occur. Alternatively, some actuaries might stress test the distribution of business by solving for the maximum amount of business that could shift and still continue to pass the self-support and lapse-support tests in the aggregate. Then they would determine if that amount of distribution shift reasonably could occur.

For self-support tests of an existing policy form, many actuaries look at actual underwriting classification distributions and distributions of policyholder choice factors. If any cells were not self-supporting, many actuaries assess the credibility of assumptions based on actual data and determine the amount, if any, of additional shifting of business toward 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, many actuaries believe it is appropriate to assume there would be no shift in distribution of business. However, many actuaries would ensure that the distribution of the closed block accurately reflects the sales that were experienced as much as reasonably possible.

Q 13.5: 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 *... Illustrated Scale Requirements—The actuary should ensure that the* ***illustrated scale*** *meets the requirements imposed by the Model as follows.*

3.3.1 Currently Payable Scale—The ***illustrated scale*** *must not be more favorable to the policyholder than the* ***currently payable scale*** *at any duration.*

3.3.2 Disciplined Current Scale—The ***illustrated scale*** *must be no more favorable to the policyholder than the* ***disciplined current scale*** *at any duration.*

3.3.3 Interest Credited Rate—For policies with interest credits linked to an external index or indices, the interest credited rate for the ***illustrated scale*** *for each indexed account shall be limited in accordance with AG 49.*

A. To meet the requirements of the ASOP and the Model, many 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, some actuaries develop an illustrated scale that is itself a DCS, so that a DCS comparison generally then would 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 generally would 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, many actuaries believe it would not be necessary to use the lower value (due to the comparison) in the roll forward calculation of future illustrated values.

Q 13.6: 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*** *… The lapse-support 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, an 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 3.10 of the ASOP, the description of and the rationale for the assumptions should be documented.

Q 13.7: 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 a lapse-support test to demonstrate compliance with this requirement. The lapse-support 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 persistency rates underlying the **disciplined current scale** for the first five policy years and 100% policy persistency thereafter. In performing the lapse-support test for a policy form, the actuary should assume that benefits that are conditional only upon policy continuation will be provided to all policies in-force at the end of year five and surviving to the date of such benefits. For policy forms that provide benefits that are conditional upon certain premium payment patterns, the actuary should consider whether all policies in-force to the end of year five will qualify for such benefits.*

A. Section 3.4.1 of the ASOP distinguishes two forms of persistency in flexible premium products: premium continuation (also known as premium persistency) 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 percent in all policy years after the fifth. Some actuaries believe the ASOP does not give direction to the actuary in choosing a premium continuation assumption after the fifth year and the requirement of "changing only the persistency assumption" is 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 in the lapse-support test.

For policy forms that provide benefits that are conditional upon certain premium payment patterns, some actuaries would interpret the ASOP as allowing for a premium continuation assumption (e.g., pay to age 85 versus maturity) that could result in policy termination or other benefit cessation, as long as the actuary considers the effect and likelihood of this assumption. Considerations that might influence an 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. Many actuaries believe it might not be realistic, or even feasible, to assume that this premium is paid on all policies.

Many actuaries believe that assuming the death benefit would be paid even if premium payment conditions are not met is not required. There are several approaches that actuaries have chosen to address the issue of a benefit being paid when premium payment conditions are not met.

Since the Model and the ASOP mandate a 100 percent policy persistency rate assumption following the fifth policy year, some actuaries may choose to use a 100 percent premium continuation assumption after the fifth policy year. However, a 100 percent 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, many actuaries consider whether allowing policies to terminate due to insufficient funding is consistent with the ASOP.

Some actuaries 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, many actuaries believe there are at least two options 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 devise additional methodologies that keep the policy in-force. For in-force testing done after the fifth policy year, many actuaries would reflect actual historical persistency experience up to the current date and 100 percent policy persistency thereafter.

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

Q 13.8: 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*** *Certification—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 11.E), 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.

Q 13.9: What mortality assumptions are used for policy years six and later under the lapse-support test?

Pertinent section of the ASOP:

> *3.6 Requirements to Prevent Lapse-Supported Illustrations—The Model prohibits illustration of **nonguaranteed elements** in policies that are deemed to be lapse-supported and establishes a lapse-support test to demonstrate compliance with this requirement. The lapse-support 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 persistency rates underlying the **disciplined current scale** for the first five policy years and 100% policy persistency thereafter. In performing the lapse-support test for a policy form, the actuary should assume that benefits that are conditional only upon policy continuation will be provided to all policies in-force at the end of year five and surviving to the date of such benefits. For policy forms that provide benefits that are conditional upon certain premium payment patterns, the actuary should consider whether all policies in-force to the end of year five will qualify for such benefits.*

A. Many actuaries assume the same mortality rates that were used in years six and later for the self-support test. Some actuaries may assume a dynamic mortality assumption dependent upon the level of lapse rates to reflect the change of the in-force population, recognizing that overall mortality rate may be lower for the remaining population when

no lapses are assumed than when normal lapses are assumed. The mortality used is derived from the mortality for the self-support test by including the more favorable mortality for the insureds who otherwise would have been assumed to lapse. The actuary should document the mortality assumptions and its rationale per section 3.10 of the ASOP, dynamic or otherwise.

14. Policy Loans

Q. 14.1: 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.*
>
> *When 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 and subject to the limitations of AG 49, 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 toward any portions of the business that do not meet the self-support 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, many actuaries believe cash policy loans, repayments, and the cash payment of loan interest are examples of items that would be included in policy cash flows. Many actuaries believe capitalization of loan interest and premium loans would not be examples of policy cash flows (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 state 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.

When reflecting loan activity, some actuaries 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, some actuaries 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 effect of policy loan utilization on dividends or interest credited to the policies could be similarly reflected.

Q 14.2: How are variable interest rate loans reflected in the lapse-support and self-support tests?

Pertinent Sections of the Model:

Section 1. Purpose

… The goals of this regulation are to ensure that illustrations do not mislead purchasers of life insurance and to make illustrations more understandable.

Pertinent Sections of the ASOP:

Section 3.4.1 (a) *The experience factor used for investment income (the investment return factor) 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 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 3.5 *Requirements for Self-Support ….*
Each illustration reflects underwriting classification, as well as certain factors that are subject to policyholder choice. The underwriting classification includes factors such as age, gender, and risk class. Policyholder choices reflected in the preparation of an illustration include, but are not limited to, the size of the policy, premium payment pattern, dividend option, coverage riders, and policy loans.

When 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 and subject to the limitations of AG 49, 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. Some insurance policies have loan provisions that charge interest and/or credit interest at a variable rate usually linked to an external index. Under these product designs, it may be possible for this loan interest spread to be negative or positive, and the spread

can change over time. If the nature of the loan provision allows for a loan spread consistent with or more favorable than non-loaned spread, some actuaries may ignore the effect of loans in testing. If based on the nature of the loan provision, the actuary anticipates a loan spread less than non-loaned spread (e.g., variable loan provisions resulting in low loan charge rate or preferred/wash loans), many actuaries would test the reduced spread on some portion of the block or a lower average spread for the entire block to approximate the effect of a lower loaned spread.

Many actuaries will sensitivity test the variable nature of the loan to gauge when the disciplined current scale no longer passes the tests. Some actuaries consider the current level of the variable rate relative to historical levels. An actuary would be prudent to consider whether the illustration could have the ability or tendency to mislead.

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. To the extent that policy forms have loan features or the sales and marketing methods create an expectation of increased loan utilization relative to actual company experience, the actuary would consider if portions of the business do not pass the tests in their own right and if so recognize shifts in distribution as described in Section 3.5.

15. Two-Tiered Products

Q 15.1: If a company were to sell a two-tiered 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. When 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 percent of eligible persisting policyholders elect illustrated annuity benefits at each successive duration. The second model would assume 100 percent 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.

16. In-force Policies

Q 16.1: A 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 Section 3.7b of the ASOP?

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.*

When 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 and subject to the limitations of AG 49, 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 3.7 *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 benefits or nonguaranteed elements (for example, some dividend formulas have an element that reflects experience from riders or some universal life secondary guarantee riders may affect base policy benefits), 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.

Q 16.2: 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.*

Section 3.4.1(e) *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. … Once the actuary selects the unit expense basis, the actuary should use that basis for the entire certification year….

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 many actuaries believe would be acceptable for determining historical expenses for the purpose of assessing if the conditions mentioned in paragraph 3.7 (a), (b) or (c) are met or for the purpose of performing lapse and self-support tests of the DCS when required. 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. Many actuaries would also update the fully allocated or marginal assumptions 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, some actuaries may use actual fully allocated assumptions for historical expenses, regardless of the actual expense assumptions used in those years. And some actuaries may instead use the actual GRET in effect in each of the prior years, while others may use the current GRET in all prior and future years. As mentioned in Section 3.10 of the ASOP, the documentation should include a description of and rationale for the assumptions.

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.

Q 16.3: 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 *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 3.7 *… 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 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 also may 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 and how experience was analyzed within the nonguaranteed element framework.

The actuary generally then would 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.

Q 16.4: Suppose a 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 $0.25 is a distribution of accumulated surplus. The company represents that it has the intent and ability to continue to pay the $0.25, so it is illustrating $1.25 on in-force illustrations. Now the company increases the paid scale to $1.50. The $0.50 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:*
>
> *d. 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*
>
> *e. 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*
>
> *f. 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, an actuary generally would *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, an actuary generally may 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, some actuaries offset the payments in excess of the original $1.00 DCS in determining the historical policy cash flows if it is 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 on a 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 generally would use professional judgment to make such a determination. The actuary generally would want to document how "intent and ability" was determined and be prepared to support such findings.

Finally, the actuary is required in Section 4.1.c of the ASOP to disclose in the annual certification the differences between illustrated nonguaranteed elements for new policies and those for similar in-force policies. And, as per Section 4.1.d of the ASOP, disclosure also is required if illustrated nonguaranteed elements on new and in-force policies differ from actual payments on the same or similar policy forms.

Q 16.5: 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 scal****e…*
>
> *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 it is determined that the original DCS would no longer satisfy the self-support and lapse-support tests and there has been no distribution of surplus or prior gains and/or no intent to use surplus or prior gains further, many actuaries would determine a revised DCS that can be shown. This revised DCS may result in an illustrated scale lower than both the original illustrated scale and the currently payable scale. Alternatively, some actuaries may illustrate the guarantees, especially if a revised DCS cannot be determined that is more favorable than the guarantee. Note that either of these approaches may cause inconsistencies that should be reported in the illustration actuary's certification per Section 4.1.c and 4.1.d of the ASOP.

Note that per Section 3.7, if the policies are receiving distributions of accumulated surplus or prior gains and the insurer has the intent and ability to continue with those distributions, then the actuary should consider if the inclusion of the distribution in both the disciplined current scale and illustrated scale are sufficient to pass the tests. If so, the scale may be in compliance with the Model and the ASOP, and the scale may continue to be used in the in-force illustration.

Q 16.6: 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. When attempting to apply the conditions of Section (a), (b), or (c) of Section 3.7 of the ASOP many actuaries would consider distribution of the business to be an experience assumption. 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 the payable scale has not been changed and 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.

If the payable scale has been changed and if those 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.

Q 16.7: 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 *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*** *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) 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: 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. Many actuaries also consider the effect the change in experience factors have on other policy features and assumptions that can impact the DCS and whether it is reasonable to conclude that the policy form would pass the tests if those tests were actually performed. Many actuaries believe that 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, they 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 a company's practice to have the DCS, the currently payable scale, and the illustrated scales all equal. In these situations, many actuaries would verify 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 also was reduced by 50 basis points or more.

Changes in the currently payable scale often are 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. An 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, if ASOP Section 3.7 (a), (b), or (c) is satisfied, the actuary would determine how the DCS and/or illustrated scale may need 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 percent earned interest rate, even though recent experience would call for an 8 percent 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 percent earned rate.

Q 16.8: For in-force illustrations, once it is determined that the self-support and lapse-support tests must be re-performed, 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 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. 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 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) 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. 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, many 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. Many actuaries make various aggregation assumptions in order to reasonably model and retest 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.

If actual past experience is not available or credible, some actuaries may use experience from similar blocks or industry data to develop historical assumptions.

Q 16.9: 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*** *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. If a 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 a case, the distributed amount would be reflected in the testing as an addition to the accumulated policy 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 a 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, many 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, many actuaries believe such assumed distributions only would be assumed retrospectively unless the actuary can document that the company has the intent and ability to continue such a 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. Alternatively, assume for each of the years prior to the present an offsetting amount equal to the excess paid amounts or the differences between the accumulated cash flows generated from anticipated experience and the actual experience factors.

Distributions of accumulated surplus or prior gains is the terminology used in the ASOP. Many actuaries would not interpret this only to mean dividends for participating policies.

Q 16.10: According to the Model and the ASOP, the illustration actuary is not required to disclose in the certification changes in the currently payable scale for reasons other than changes in experience factors on policies issued more than five years ago. Is the illustration actuary required to test and/or certify disciplined current scales on policies issued more than five years ago?

Pertinent Sections of the Model:

> ***Section 11.B*** *The illustration actuary shall certify that the disciplined current scale used in illustrations is in conformity with the Actuarial Standard of Practice for Compliance with the NAIC Model Regulation on Life Insurance Illustrations promulgated by the Actuarial Standards Board, and that the illustrated scales used in insurer-authorized illustrations meet the requirements of this regulation.*
>
> ***Section 11.C.(5)*** *[The illustration actuary shall]… Disclose in the annual certification whether, since the last certification, a currently payable scale applicable for business issued within the previous 5 years and within scope of the certification has been reduced for reasons other than changes in the experience factors underlying the disciplined current scale ….*

Pertinent Sections of the ASOP:

Section 3.7 *Illustration 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. …*

A. The illustration actuary is required to certify the illustrated and disciplined current scales used in illustrations for all policies are within the scope of the regulation. Although policies more than five years old are excluded from the requirement to disclose changes in the currently payable scale for reasons other than changes in experience factors, they are not excluded from the annual certification requirements.

Q 16.11: If an in-force plan passes both the lapse-support and self-support tests when the illustrated nonguaranteed interest rate is set to the minimum guaranteed interest rate, but the earned interest rate assumption underlying the current discipline scale is less than the plan's illustrated guaranteed interest rate, then is it acceptable for the illustration actuary to certify that the plan is still illustratable given that Section 6.C of the Model states that the illustrated nonguaranteed interest rate shown shall not be greater than the earned interest rate underlying the disciplined current scale?

Pertinent Sections of Model:

Section 1*. Purpose… The goals of this regulation are to ensure that illustrations do not mislead purchasers of life insurance and to make illustrations more understandable …*

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.*

Section 10.C. *Upon request of the policy owner, the insurer shall furnish an in-force illustration of current and future benefits and values based on the insurer's present illustrated scale. This illustration shall comply with the requirements of Section 6A, 6B, 7A, and 7B ….*

Pertinent Section of the ASOP:

Section 3.4.1 a *Investment Return—The* ***experience factor*** *used for investment income (the investment return factor) 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.*

A. Section 10.C of the Model states that any in-force illustration provided upon request by the policyholder must comply with Sections 6.A, 6.B, 7.A, and 7.D. Many actuaries interpret the omission of any reference to Section 6.C in the text of Section 10.C to mean that interest rates used to determine the nonguaranteed elements may be "shown" in an in-force illustration even when the rate used exceeds the earned interest rate used in the self- and lapse-support tests. However, to the extent that showing an interest rate in excess of the earned interest rate could "mislead purchasers" or make the illustration less

"understandable," many actuaries also would consider the text in Section 1 of the Model when making this determination.

Q 16.12: Per Section 3.6, the lapse-support test should use "the persistency rates underlying the Disciplined Current Scale for the first five years and 100% persistency thereafter." When performing lapse-support tests for in-force policies, should the lapse rates underlying the DCS be used for:

- **All past and future policy years up to the first five but not for past or future years beyond the fifth policy year;**
- **All past policy years, all future years up to policy year five; but not for future years beyond the fifth policy year; or**
- **The first five policy years of the in-force projection; i.e., the next five policy years.**

Pertinent Sections of the Model:

Section 4.J *"Lapse-supported illustration" means an illustration of a policy form failing the test of self-supporting as defined in this regulation, under a modified persistency rate assumption using persistency rates underlying the disciplined current scale for the first five (5) years and 100 percent policy persistency thereafter.*

Pertinent Sections of the ASOP:

Section 3.6 *… The lapse-support 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 persistency rates underlying the* ***disciplined current scale*** *for the first five policy years and 100% policy persistency thereafter…*

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* ***currently payable scale*** *and the* ***disciplined current scale****.*

A. Many actuaries address in-force testing in two ways: modeling the business from issue or taking current in-force and testing it going forward. The fifth policy year requirement may be addressed differently based on the manner in which the actuary tests the business.

When modeling from issue, many actuaries would keep the persistency assumptions the same as the self-support test, then after the fifth policy year, would assume 100 percent persistency as outlined in Section 3.6. Some actuaries may include actual experience up to the current date.

When modeling using the current status of the block, actuaries may consider how actual experience is incorporated into the business. For business that may be closed but still includes policies that are not beyond the fifth policy year, many actuaries would keep the

assumptions consistent with the self-support test through the fifth policy year and keep 100 percent persistency beyond the fifth policy year for all policies. For business that may have been written more than five years ago, many actuaries would have 100 percent persistency from the current testing date forward.

17. Reinsurance

Q 17.1: How are unaffiliated third-party reinsurance arrangements treated in developing a DCS and performing the self-support and lapse-support tests?

Pertinent Sections of the Model:

Section 6.B *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 11.A *The board of directors of each insurer shall appoint one or more illustration actuaries.*

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

Pertinent Sections of the ASOP:

Section 4.1 *Certification—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. ...*

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 3.8 *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 any changes, such as the following, to the extent known to the actuary: ...*
e. *new or revised reinsurance agreements.*

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 percent to 100 percent 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 so that individual cases are ceded to a reinsurer at lower net cost than the cost the ceding insurer would have on the business.

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 be directly 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 challenges 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 the ASOP in reflecting the effect 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 Precept 7 of the Code of Professional Conduct (Conflict of Interest) 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 also may 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 reasonably may 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.

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.

Some actuaries 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, is used.

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 easily can 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.

Q 17.2: How are affiliated party reinsurance arrangements treated in developing a DCS and performing the self-support and lapse-support tests?

Pertinent Sections of the Model:

Section 6.B *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 11.A *The board of directors of each insurer shall appoint one or more illustration actuaries.*

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

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 with the requirements set forth in this ASOP. Certifications should also be made for newly introduced forms before a new policy form is illustrated. ...*

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 3.8 *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 any changes, such as the following, to the extent known to the actuary: ...*

e. *new or revised reinsurance agreements.*

A. Most of the issues associated with unaffiliated third-party reinsurance agreements also would be applicable to affiliated reinsurance agreements.

However, additional issues may arise when taking reinsurance cash flows into account when the reinsurance arrangement involves an affiliated or 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 also might 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 also may 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).

Some additional issues may include letter of credit costs and overhead and maintenance expenses. Another issue is whether additional costs should be included for reinsurance when using GRET expense factors. Many actuaries consider how expenses and other assumptions meet the requirements and would include in the documentation the rationale for how these costs are reflected in the self-support and lapse-support tests.

18. Sample Certification

Q 18.1: What sort of certification must the illustration actuary make?

Pertinent Sections of the Model:

Section 11.C(5) *Disclose in the annual certification whether, since the last certification, a currently payable scale applicable for business issues within the previous five (5) years and within the scope of the certification has been reduced for reasons other than changes in the experience factors underlying the disciplined current scale. If nonguaranteed elements illustrated for new policies are not consistent with those illustrated for similar in-force policies, this must be disclosed in the annual certification. If nonguaranteed elements illustrated for both new and in-force policies are not consistent with the nonguaranteed elements actually being paid, charged or credited to the same or similar forms, this must be disclosed in the annual certification.*

Section 11.C(6) *Disclose in the annual certification the method used to allocated overhead expenses for all illustrations; …*

Pertinent Section 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 with the requirements set forth in this ASOP. Certifications should also be made for newly introduced forms before a new policy form is illustrated.*

A. The Model requires the illustration actuary to certify that the DCS of nonguaranteed elements for illustrated plans of insurance within the scope of the Model meet the requirements of the Model. In addition, the Model applies to "policies sold on or after the effective date" of the Model. Many actuaries would certify to the scale in effect as of the certification as well as scales used since the last certification. This is consistent with item 11.17 in the NAIC's Q&A Life Illustration Model Regulation as of March 19, 1997. In addition, Section 11.B(5) and (6) of the Model requires that certain disclosures be made in the certification.

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 illustrative 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 ensuring that the language used in the illustration certification accurately represents the situation and the actuary's opinion. The certification language

below is provided for illustrative purposes only and is not a substitute for language that may be 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 No. 24 are the following:

_____ _____

Title Date

Company Name

Address