ACTUARIAL STANDARDS OF PRACTICE

Financial Reporting
Recommendations and Interpretations

Adopted by the
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American Academy of Actuaries

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Introduction

For the last several years, the Actuarial Standards Board (ASB) has been working to revise and update the Financial Reporting Recommendations and Interpretations.

The following recommendations and interpretations have been replaced by actuarial standards of practice (ASOPs) and actuarial compliance guidelines (ACGs).

- Recommendation 1 has been replaced by ASOP No. 10.
- Recommendation 2 has been replaced by ASOP No. 21.
- Recommendation 3 has been replaced by ASOP No. 21.
- Recommendation 4 has been replaced by ASOP No. 11.
- Recommendation 5 has been replaced by ASOP No. 10.
- Recommendation 6 has been replaced by ASOP No. 10.
- Recommendation 8 has been replaced by ASOP No. 36.
- Recommendation 10 has been replaced by ASOP No. 28.

Please note that for application in those states and jurisdictions that *have adopted* the 1990 Amendments to the NAIC Standard Valuation Law and the accompanying Actuarial Opinion and Memorandum Regulation, the following apply:

- Recommendation 7 has been replaced by ASOP No. 22 and ACG No. 4.
- Recommendation 11 has been replaced by ASOP No. 22 and ACG No. 4.

The following recommendations and their accompanying interpretations remain in effect at this time:

- Recommendation 7 (where ASOP No. 22 and ACG NO. 4 do not yet apply).
- Recommendation 9.
- Recommendation 11 (where ASOP No. 22 and ACG No. 4 do not yet apply).

Statement Respecting the Structure and the Procedures of Financial Reporting Recommendations and Interpretations

The following recommendations and interpretations are intended to interpret and amplify the application of the *Guides and Interpretative Opinions as to Professional Conduct* of the American Academy of Actuaries in relation to the financial reporting of insurance companies, and are promulgated pursuant to Interpretative Opinion 4 in accordance with procedures prescribed by the Actuarial Standards Board. They apply to any actuary who acts for an insurance company in the preparation of a financial statement or report, who contributes elements for inclusion in any such financial statement or report, or who audits or reviews elements of any such financial statement or report, when such statement or report is to be presented as having been prepared in accordance with “generally accepted accounting principles” or on a statutory accounting basis, as those terms are understood in the United States, and is intended for stockholders, policyowners, taxing authorities, regulatory authorities, or the general public, and is designed to show operating results, solvency, or other aspects of financial condition.

It would be inappropriate to prescribe inflexible guides for the performance of the actuary’s work in connection with the financial reporting of insurance companies. The selection of assumptions and methods involves professional judgment based on the circumstances applicable to a particular situation, including the purpose or purposes that the actuary’s work is intended to serve. The promulgation of uniform procedures or practices that fail to take into account such circumstances and variables would be unprofessional.

On the other hand, there is merit in adopting a statement of principles relating to the appropriate application of actuarial science to the financial reporting of insurance companies and to adequate disclosure of pertinent and material facts. It is believed that the making and the observing of such a statement of the basic responsibilities of the actuary will tend to minimize the possibility of misunderstanding or misinterpretation by those relying on his or her work and the likelihood of need for disciplinary action under Article VIII of the Academy’s Bylaws.

A requirement common to all actuarial procedures is that assumptions and methods be selected and applied with integrity, informed judgment, and perspective in relation to the purpose for which the results are intended.

Assumptions and methods may appropriately be different in calculations related to the same period or moment in time but intended for different purposes. For example, the statutory valuation of insurance reserves for use in financial reports to state regulatory authorities or the valuation of insurance reserves for use in federal income tax returns may require different assumptions and methods from those used for reserve valuations and related calculations in connection with financial statements that are prepared in accordance with generally accepted accounting principles.

ACTUARIAL STANDARD OF PRACTICE

RECOMMENDATION 7:
Statement of Actuarial Opinion for
Life Insurance Company Statutory Annual Statements

(Adopted 1975; Revised 1978)

1. This Recommendation delineates the responsibility of the actuary in signing the type of statement of actuarial opinion which is described in the Instructions to the NAIC Life and Accident and Health Blank as adopted at the June 1975 meeting of the NAIC Blanks Subcommittee. Such opinion relates to the policy and contract reserves and other actuarial items contained in an Annual Statement of a Life Insurance Company to a state regulatory authority, i.e., the "Statutory Statement."

2. The statement of actuarial opinion should list the items and amounts on which the actuary expresses an opinion. The list should include but not necessarily be limited to the aggregate reserve for life policies and contracts (Exhibit 8 of the Statement), aggregate reserve for accident and health policies (Exhibit 9 of the Statement), net deferred and uncollected premiums, and policy and contract claims liability at the end of the current year (Exhibit 11, Part 1 of the Statement). The actuary need not extend his or her review to items other than those specified in the Instructions, except possibly in instances where such items are computed by means of a long-term discounting of future payments which are dependent upon the occurrence of events in the future. Examples of such items might include additional reserves for optional modes of settlement at maturity, optional nonforfeiture benefits, additional reserves for excess mortality under group conversion policies, reserves involving life contingencies under Separate Account contracts; reserves for group pension deposit type contracts, and other such items if not included in Exhibits 8, 9 and 11, Part 1.

3. The Instructions require that such a statement express the opinion of the actuary as to whether such reserves and other actuarial items:

   (a) are computed in accordance with commonly accepted actuarial standards consistently applied and are fairly stated in accordance with sound actuarial principles,

   (b) are based on actuarial assumptions which produce reserves at least as great as those called for in any policy or contract provision as to reserve basis and method, and are in accordance with all other policy or contract provisions,

   (c) meet the requirements of the insurance laws of (state of domicile),

(d) make a good and sufficient provision for all unmatured obligations of the company guaranteed under the terms of its policies,

(e) are computed on the basis of assumptions consistent with those used in computing the corresponding items in the annual statement of the preceding year end, and

(f) include provision for all actuarial reserves and related statement items which ought to be established.

Paragraphs 4 through 9 comment on these six responsibilities.

4. "Commonly accepted actuarial standards" and "sound actuarial principles" emerge from the utilization and adaptation of concepts described in actuarial literature. Such literature includes the Recommendations and Interpretations of the American Academy of Actuaries; the professional journals of the Society of Actuaries, its predecessors, the Conference of Actuaries in Public Practice and the Casualty Actuarial Society; recognized actuarial textbooks; and regulations of the National Association of Insurance Commissioners and of State Insurance Departments. The Study Notes for candidates for membership in the Society of Actuaries are also valuable parts of the literature, but it should be kept in mind that the Study Notes are intended primarily to teach basic principles rather than to specify operating instructions. The actuary's judgment in developing the standards for the actuarial computation must take into account the specific characteristics of the policies with respect to which the actuary is expressing an opinion.

5. A significant element in the examination of actuarial assumptions and methods is a consideration of the policy and contract provisions affecting the reserves or other actuarial items which ought to be established. The following is a list of examples—not intended to be complete—of policy provisions that should be considered: the contractual treatment of fractional premiums paid beyond the date death; interest guarantees under premium or retirement deposit funds; conversion rights under renewable and convertible term policies; rate guarantees under optional settlement provisions; extended benefits under group policies; and maternity benefits.

6. The actuary should also check the valuation requirements of the state of domicile of the company on whose reserves he or she is expressing an opinion. The actuary should be aware of the prescribed valuation procedures; the minimum reserve basis and valuation method applicable to each policy series (or in the case of group annuity contracts, to annuities purchased under those contracts in a given year or years); and the applicability of any aggregate test of reserve adequacy prescribed in the state's valuation law. Other examples of prescribed valuation procedures to be considered are requirements that reserves may not be less than the corresponding cash surrender values, and that appropriate reserve recognition of any premium deficiencies must be made.

7. It is important to note that the actuary is expressing an opinion on the adequacy in the aggregate of all the enumerated reserves and that possible deficiencies for individual components of the total reserves may be offset by margins in other items. In most circumstances the actuary may be able, by examination of the interest, mortality and morbidity assumptions and the company's prior experience under those assumptions, to form an opinion as to whether the conservative intent of the statutory provision has been met in the selection of valuation assumptions. In those instances wherein there is evidence that because of company experience or practices, inappropriate or inadequate statutory reserve standards, or extraordinary external events occurring prior to the Statement date, the statutory reserves might not make good and sufficient provision for unmatured obligations, then the actuary should make further tests (possibly by a gross premium valuation as described in general terms below) before expressing an opinions as to such policy reserves and other actuarial items.

A gross premium valuation may be made for an entire line of business or a major block of business. The results of such a gross premium valuation for a line or block of business are considered satisfactory for this purpose if the current reserve on the reserve basis being tested provides an appropriate margin over the excess of:

(a) the then-present value of future benefits and anticipated expenses, and

(b) the then-present value of future guaranteed gross premiums using interest, mortality, morbidity, lapse, expense and any other appropriate assumptions selected as of the valuation date reflecting actual and anticipated experience. Provision for the expense of administration of nonpremium paying policies should be made. Model office, sampling, and other approximation techniques are appropriate if the actuary is satisfied that the results are indicative for the line or block of business being tested.

With respect to both the claim liabilities in Exhibit 11, Part 1, and the net deferred and uncollected premium amount, it is incumbent upon the actuary to pay particular attention to such factors as payment patterns, the mix of business by plan (especially health plans) and accounting cutoff dates.

8. If there is any change in the actuarial assumptions or methods from those previously employed, that change should be mentioned in the actuarial statement. The adoption for new issues of an actuarial assumption or method which differs from a corresponding assumption or method for prior issues is not a change in actuarial assumptions or methods within the meaning of this paragraph. Similarly, where the determination of reserves or claim liabilities is based on the periodic updating of experience data, such periodic updating is not a change in actuarial assumptions or methods within the meaning of this paragraph; examples could include reserves or claim liabilities for recently incurred claims (e.g., within two years or less) under disability and accident and health benefits.

9. A statement that provision has been made for all actuarial items which ought to be established is

an affirmation by the actuary that he or she was thorough in his or her consideration of the first five points enumerated in paragraph 2, and that recommendations as to these items have been carried out to his or her satisfaction.

10. The statement of actuarial opinion should include (1) a paragraph giving the actuary's name and relationship with the company; (2) a scope paragraph identifying the subjects on which an opinion is to be expressed and describing the scope of the actuary's work; and (3) an opinion paragraph expressing his or her opinion with regard to such subjects. One or more additional paragraphs may be needed in individual cases if the actuary considers it necessary to state a qualification of his or her opinion or to explain some aspect of the Annual Statement which is not already sufficiently explained in the Annual Statement.

Interpretation 7-A:
Responsibilities of the Actuary and Others

(Adopted 1975)

1. An actuary stating an actuarial opinion in a statutory Annual Statement is expressing a personal opinion for which the actuary takes full responsibility, except to the extent to which the opinion indicates reliance on other opinions. However, the actuary will ordinarily make use of other personnel to carry out assignments relative to the matters which the opinion covers. The actuary should not ordinarily indicate, in the opinion, reliance on such other persons.

2. The Instructions include wording appropriate for use in the case where the actuary relies on an accounting firm for the accuracy of the in force inventory. That wording is appropriate for use where the accounting firm maintains the company in force inventory. However, the actuary should not indicate reliance on an accounting firm that acts solely as an auditor of the in force inventory, since it is the intent of the Instructions that the actuary indicate reliance, if at all, on the person or firm directly responsible for maintaining the in force.

3. Most life insurance companies have an organizational structure in which the pertinent financial reporting responsibility is held by a single actuary or chief actuary who has knowledge of the actuarial items pertaining to all lines of the company's business. In that case the one actuary should sign the opinion as called for by the Instructions. However, in a life insurance company where no one actuary has sufficient knowledge of the actuarial items to enable him or her to render a single opinion or the business of the entire company (as, for example, may occur in a company where financial reporting responsibility for various product lines is divided among two or more actuaries), the actuaries should consider how best to comply with the Instructions requiring the "statement of a qualified actuary. . . ." The question should also be considered where a company actuary is responsible for some actuarial statement items and an outside actuarial consultant is responsible for others.

   In those circumstances where more than one actuary is to sign a statement of opinion, the following approaches appear to the Committee to be in accordance with the intent of the Instructions and satisfactory from a professional standpoint:

   (a) One actuary could state an opinion as to all the actuarial items, and indicate reliance on another actuary's statement of opinion, also included on the same page of the Statement, as to that portion of the actuarial items for which the second actuary, rather than the first, takes responsibility.

   (b) Each actuary could sign the statement of opinion with respect to the portion of the actuarial items for which that actuary takes responsibility. The opening paragraph, scope paragraph and opinion paragraph should properly identify the actuaries who are rendering the statement of opinion. The statement should clearly identify the separate amounts of the listed actuarial items on which each actuary is expressing an opinion. Below each actuary's signature there should be added such words as "with respect to (line of business—Life, Group, Health, Annuity, etc., as appropriate) actuarial items."

Interpretation 7-B:
Adequacy of Reserves

(Adopted 1975; Revised 1978)

1. The actuarial opinion deals with policy and contract liabilities and other actuarial items. Although the valuation bases of invested assets, and their yield, are matters to be considered in adopting reserve valuation assumptions, the statement requirement does not call upon the actuary to express an opinion with regard to the general assets of the company. The NAIC spells out the valuation bases for assets in some considerable detail, and it is expected that the actuary can rely on the company's valuation of assets in accordance with those procedures, and the resulting yield in determining valuation interest assumptions.

2. In forming an opinion as to whether reserves "make a good and sufficient provision for all unmatured obligations of the company. . . ," the actuary should evaluate the actuarial assumptions used by comparison with plausible sets of adverse circumstances and in relation to the time periods over which such circumstances can plausibly be expected to prevail. To hold reserves so great that a company could withstand any conceivable circumstances, no matter how adverse, would imply an excessive level of pricing of the insurance product, and good actuarial practice does not encompass such a degree of conservatism.

3. The comments on gross premium valuation in the seventh paragraph of Recommendation 7 refer to "an appropriate margin" over the gross premium reserves. Appropriateness of the margin should be judged in the manner described in paragraph 2 above. That gross premium valuation is a test for solvency under assumptions based on actual and anticipated experience. Therefore, the following factors should be considered:

   (a) trends in the company's unity expense rates, including but not limited to the impact of inflation and of changes in productivity of company staff and equipment upon such expense rates;

   (b) consistency between the trends in annual statement portfolio yield rates and the inflation assumption used for expense rates; and

(c) the extent to which policy dividends may be reduced in the future, if solvency is in question.

Interpretation 7-C:
Qualification of Actuary's Statement of Opinion

(Adopted 1975)

1. The Instructions to the NAIC Life and Accident and Health Blank as adopted at the June 1975 meeting of the NAIC Blanks Subcommittee require the actuary to state an opinion, if formed, whether unqualified or not. If the opinion is qualified or adverse, the reason(s) for that opinion should be explicitly stated.

2. The following is an example, for illustrative purposes, of language that might be included in an actuary's qualified statement of opinion in a Statutory Statement. The language should indicate the actuary's estimate of the amount of reserve inadequacy, and should follow the scope paragraph and precede the opinion paragraph:

   > The company holds aggregate life insurance, annuity and accident and health insurance reserves of $__________. Although this amount meets the statutory requirements of the state of __________, it does not appear adequate in the light of the company's experience. Tests indicate this amount would have to be increased to approximately $_________ to make a good and sufficient provision for the unmatured obligation under the company's policies and contracts.

   (When appropriate the actuary may identify specific reserve items which are inadequate.)

   The opinion paragraph should then begin:

   > In my opinion, except for the matter referred to in the preceding paragraph, the amounts carried in the balance sheet on account of the actuarial items identified above
   >
   > (i) . . . (a listing of the items of the statement of opinion)

   The illustrative language should be modified as needed to meet the circumstances of a particular case, and the actuary should, in events, use language which clearly expresses the actuary's professional judgment.

3. If the inadequacy exceeds Statement surplus, the qualifying paragraph should so state.

ACTUARIAL STANDARD OF PRACTICE

RECOMMENDATION 9:
Materiality

(Adopted 1978; Revised 1983)

1. This Recommendation, sponsored by the Committee on Life Insurance Financial Reporting Principles, discusses the application of the concept of materiality to actuarial aspects of the financial reporting of life insurance companies.

   The concept of materiality is frequently referred to in actuarial practice and literature. For example, Recommendation 2, paragraph 4 states that "approximations and approximate methods may be used, provided that the actuary has satisfied himself that the result does not differ materially from the result of using more precise methods." As another example, the paper "Analysis of Approximate Valuation Methods," by E. Allen Arnold in Volume VII of the *Transactions of the Society of Actuaries*, deals theoretically with methods for approximation.

2. An actuary is expected to pay scrupulous attention to professional standards in the selection of actuarial assumptions and methods, and in the disclosure of significant information to those whose actions may be influence by his or her actuarial opinions or findings. An actuary, however, may find that the improvement in accuracy or in understanding which may result from the application of theoretically ideal formulas and methods in complete detail, without regard to considerations of timing and expense, by comparison with the use of approximation or other shortcut procedures, or the omission of a specific disclosure, is so slight as not to justify the expenditure of the additional time and money needed. Under the concept of materiality, it is appropriate for the actuary to employ such approximate methods and procedures when the effect would be immaterial—that is, of little significance to a potential use of the actuary's work. It is also generally not necessary to utilize methods or procedures which imply a degree of precision that is in fact unattainable due to the level of uncertainty which may be contained in the actuarial assumptions employed.

3. Determining whether an item is material or not is a difficult professional judgment. In making that judgment, the actuary should consider the decision-making framework of the typical user of the actuary's work, and his or her probable response. The judgment involves quantitative as well as qualitative consideration. Although Interpretations of this Recommendation attempt to provide guidance to the actuary in making decisions as to each of these elements of the materiality judgment, they do not constitute a precise definition of materiality.

4. Accountants, in their audit review of financial statements, are governed by generally accepted accounting principles and auditing standards, which involve application of a similar concept of materiality. The actuary and the auditor should be expected to make their respective decisions as

to materiality in the light of their judgment of users' needs, as influenced by the concepts and standards of their respective professions.

Interpretation 9-A: Materiality, Typical Users

(Adopted 1978; Revised 1983)

1. Opinion 3: Professional Communications of Actuaries describes the general responsibility of the actuary to the users of his or her services to whom his or her actuarial communications are directed. When the actuary determines materiality, he or she must further take into account who will be the expected final user of his or her work.

2. In the case of a GAAP statement for a stock life insurance company, the actuary should consider the stockholder or potential stockholder as the primary user.

3. In the case of a statutory financial statement the actuary may consider the primary users to be the policyholder and the insurance regulator, without implying that other parties do not have an interest in the financial condition of the company.

4. Since an insurance company's financial statement may be used for the purpose of borrowing funds, the actuary should consider the creditor's point of view.

5. The actuary should also be aware of the criteria employed by other interested parties, such as the independent auditor.

Interpretation 9-B:
Materiality, Quantitative Considerations

(Adopted 1978)

1. The following paragraphs comment briefly on quantitative concepts that the actuary may find useful in making his or her judgments as to materiality. In no case should the actuary regard quantitative tests as conclusive, but he or she may use them as a corroborating supplement to his or her judgment. Any quantitative judgment should be regarded, at most, as raising a presumption which may be rebutted, in the actuary's judgment, by particular circumstances in the case.

2. The primary criteria for materiality applied by an actuary for a GAAP statement of a stock insurance company should be related to the earnings of the company, both in absolute amounts and in terms of trend. In the case of statutory statements, emphasis should be placed on the level of surplus.

3. The magnitude of financial effect of a matter should be viewed in terms of both absolute and relative amounts. For instance, when earnings or surplus are of significant absolute dollar amount, the materiality judgment should generally be related to percentage change. However, the percentage change consideration may not be appropriate when a small dollar amount of earnings or surplus serves as the criterion. When the dollar amount of change is very large, materiality may be implied for this reason alone.

4. The actuary must decide on the materiality of items for which he or she is responsible. In making such judgments, the actuary should also consider whether the cumulative effect or the net effect of a number of items (including items that may be the responsibility of other actuaries or of accountants) may be material even though each item individually may be immaterial. As examples of such judgments, with no implication that this Interpretation should be limited to such examples, materiality would influence the actuary's judgment in the following cases:

    (a) in considering disclosure of the effect of any inconsistency in the timing of premium recognition as between gross and valuation premiums, the actuary need not disclose an immaterial difference;

    (b) reinsurance adjustments for Yearly Renewable Term contracts may be omitted or approximated if such adjustments are not material;

(c) a change in an actuarial assumption between reporting periods need not be disclosed if the effect of such change is not material; and

(d) the statutory value of a reserve item may be used to represent its value in a statement prepared under Generally Accepted Accounting Principles (GAAP) if the effect of the substitution is not material.

Interpretation 9-C: Materiality, Qualitative Considerations

(Adopted 1978)

1. A stricter test for materiality should be applied to those items which will have a continuing and pervasive effect on future statements of the insurance company than to unusual and nonrepetitive items.

2. In making a materiality judgment, the actuary should consider the cost of developing precise information, relative to the benefits to users of that information. Disclosure may be indicated if approximations of significant items are made for cost considerations.

3. The actuary must make his or her judgment regarding materiality on the basis of information available at the time the judgment is made. It is manifestly improper to pass on materiality in the light of subsequent events, i.e., on a “hindsight” basis.

4. The actuary should consider including in the actuarial report a brief description of those circumstances where he or she made a close decision to treat an item or an aggregate or net of a number of items as not material.

ACTUARIAL STANDARD OF PRACTICE

RECOMMENDATION 11: Statement of Actuarial Opinion for Interest-Indexed Universal Life Insurance Contracts

(Adopted 1984)

1. This Recommendation delineates the responsibility of the actuary in signing the type of statement of actuarial opinion which is described in the Universal Life Model Regulation as adopted at the December, 1983 meeting of the NAIC. Such opinion relates to the Interest-Indexed Universal Life Insurance Contracts issued by an insurer.

2. The Model Regulation requires that such a statement express the opinion of the actuary as to whether or not the anticipated insurance and investment cash flows make good and sufficient provision for the contractual obligations of the company under such contracts. While the wording in the Model Regulation uses the phrase "the anticipated insurance and investment cash flows make good and sufficient provision for the contractual obligation," a more technical description (and the interpretation we place on this phrase) is that the anticipated investment cash flows plus anticipated considerations to be received make good and sufficient provision for the anticipated insurance cash outflows (i.e., payment of obligations plus the associated expenses).

Paragraphs 3 through 8 comment on these responsibilities.

3. The statement of actuarial opinion should identify the in force policies and contracts on which the actuary expresses an opinion. Cash flows arising from policies to be sold after the valuation date are not to be considered. The actuary's review need not extend to items other than those specified in the Regulation.

4. The statement of actuarial opinion should be based upon "commonly accepted actuarial standards" and "sound actuarial principles," which emerge from the utilization and adaptation of concepts described in actuarial literature. Such literature includes the Recommendations and Interpretations of the American Academy of Actuaries; the professional journals and the Society of Actuaries, its predecessors, the Conference of Actuaries in Public Practice and the Casualty Actuarial Society; recognized actuarial textbooks; and regulations of the National Association of Insurance Commissioners and of State Insurance Departments. The Study Notes for candidates for membership in the Society of Actuaries are also valuable parts of the literature, but it should be kept in mind that the Study Notes are intended primarily to teach basic principles rather than to specify operating instructions and that they do not reflect any official interpretation or opinion of the Society of

Actuaries. The actuary's judgment in developing the standards for the actuarial tests and calculations must take into account the specific characteristics of the contracts and cash flows with respect to which the actuary is expressing an opinion.

5. A significant element in the examination of actuarial assumptions and methods is a consideration of the contract provisions affecting the cash flow needs of the company. The following is a list of examples—not intended to be complete—of policy provisions which should be considered: interest guarantees; interest indexing; surrender and loading charges; mortality guarantees, and expense guarantees.

6. The actuary should check the valuation requirements, if any, of the state of domicile of the company on whose contracts he or she expressing an opinion. The actuary should also be aware of, and take into account, any prescribed valuation procedures.

7. It is important to note that the actuary is expressing an opinion on the adequacy of the investment and insurance cash flows arising from the contracts to which the statement of actuarial opinion pertains. This implies an identification of asset cash flows relative to such contracts. Projections of investment and insurance cash flows should be made under various assumptions as to future interest rates, recognizing those contractual provisions and characteristics of the company's contracts and investments that might cause future cash flows to vary with changes in the level of prevailing interest rates. Any reliance on the company's Chief Investment Officer for investment cash flows and any reliance on the investment policy of the insurer, as filed, should be noted in the opinion.

8. If there is any change in the actuarial assumptions or methods from those previously employed, that change should be described in the actuarial statement. The determination of cash flow projections based on the periodic updating of experience data is not a change in actuarial assumptions or methods within the meaning of this paragraph.

9. The statement of actuarial opinion should include (1) a paragraph giving the actuary's name and relationship with the company; (2) a paragraph identifying the subject on which an opinion is to be expressed and describing the scope of the actuary's work; and (3) a paragraph expressing his or her opinion with regard to such subject. One or more additional paragraphs should be included if the actuary considers it necessary to qualify the opinion or to explain some other aspect of the opinion.

Interpretation 11-A:
Interest-Indexed Universal Life Insurance Contracts

(Adopted 1984)

The Interpretations supporting Recommendation 11 provide more detailed guidance for the actuary than is usually the case. This is a deliberate effort on the part of the Committee to provide guidance in the area where methodology is likely to continue developing. Because new techniques are likely to emerge in the near future, it should be remembered that the Interpretations are guidelines and that other approaches and techniques are acceptable if the actuary demonstrates they are satisfactory in a specific situation. Thus, while the Interpretations contain many guidelines and suggestions, it should not be inferred that other approaches are prohibited.

1. The actuary should review the contract provisions under the contracts being tested, identifying the provisions (i.e., future considerations and contractual payments) that can materially affect future insurance cash flows.

2. In testing the adequacy of future cash flows, the actuary will need to project future cash flows from the contracts under various paths of future interest rates—both insurance cash flows from the contractual obligations under the contracts, and investment cash flows from the assets held by the company in support of the contracts. When making such projections, the actuary should employ assumptions which contain sufficient margins to cover reasonable fluctuations from best estimate expected assumptions.

In projecting insurance cash flows, the actuary should consider contractual provisions and noncontractual conditions or assumptions that can affect future cash flows. For example, the following contractual provisions and assumptions are among those that should be considered by the actuary:

(a) the amounts and incidence of guaranteed or projected death benefit payments;

(b) the likely amounts and incidence of policy loans, partial withdrawals and surrenders, recognizing the surrender charges or other penalties, if any, contained in the contract;

(c) the likely amounts and incidence of future considerations to be received and the amount of sales and related compensation to be paid on them;

(d) the amount of future maintenance expenses; and

(e) the amount of future premium and income taxes to be paid.

Each of the above should be examined to determine the extent to which future insurance cash flows may vary due to changes in the prevailing interest rates. For example, the incidence of future premium payments, partial withdrawals, surrenders, policy loans, etc. may be expected to vary as interest rates rise or fall.

3. The Universal Life Model Regulation requires each company to submit a description of the amount and type of assets held by the insurer with respect to its Interest-Indexed Universal Life Insurance

contracts. In addition, the company is required to file its investment policy. In expressing an opinion, the actuary may rely on the investment policy of the insurer, as filed, and on projected investment cash flows provided by the company's Chief Investment Officer. Similarly, the actuary should consider anticipated future management actions as they influence insurance cash flows. For example, management's plans for modifying premiums on nonguaranteed premium products, establishing credited interest rates and mortality charges at levels different than the minimum guaranteed levels of the contracts, etc., should be considered.

In projecting investment cash flows, the actuary, or the officer on whom the actuary may be relying, should pay particular attention to those characteristics of the invested assets that can affect future cash flows, such as:

(a) the types of investments and whether future investment cash flows are fixed or variable (e.g., due to equity features in the investment);

(b) the amounts and incidence of scheduled (or expected) investment earnings;

(c) the amounts and incidence of scheduled repayments of principal;

(d) early repayment provision (e.g., call provisions);

(e) the expected marketability of the investments (e.g., private bonds and mortgages vs. public issues);

(f) the impact of hedging, options or similar strategies; and

(g) investment-related expenses and taxes, as applicable.

Each of the above should be examined to determine the extent to which future investment cash flows may vary due to changes in the prevailing interest rates. For example, as interest rates fall, nonscheduled repayments of principal may be expected to rise; as interest rates rise, such repayment may decline.

The projections of investment cash flows should include investment earnings and repayments of principal not only from the invested assets held by the company on the valuation date, but also from assets to be acquired after the valuation date. This requires an explicit assumption in the projections as to how any future net positive cash flows will be invested, with particular emphasis on the durations of such investments and the extent to which the durations of future investments may vary with prevailing interest rates at the time of acquisition. Similar assumptions are also required for interest rates and durations of borrowed money, which again will vary with the prevailing interest rates at the time of borrowing, if borrowed funds are needed to cover future negative cash flows at any time during the projection period. It should be noted that, in general, the cost of borrowing money may be greater than the prevailing interest rate that can be earned.

To the extent assets are assumed to be sold, either to cover future negative cash flows at any time during the projection period, or for other reasons, an explicit assumption about the capital gains or capital losses, and federal income taxes thereon, needs to be made.

4. While the actuary is expected to examine the scheduled investment earnings and repayments of principal from the assets supporting the contracts, and the extent to which these cash flows may vary with changes in future interest rates, it is not expected that the actuary will be called upon to express an opinion with regard to the underlying quality of the assets and with regard to the risk of asset default as to interest and/or principal. In this regard, it is expected that the actuary can rely on the company's valuation of assets in accordance with NAIC asset valuation bases and procedures. The actuary may wish to include provision for the risk of default (interest and/or principal) by an explicit reduction in the assumed cash flows of investment income or principal repayment.

5. Among the most important assumptions in the projections of insurance and investment cash flows are the various paths of future interest rates being tested. Testing on a single path of future interest rates, even if that path is deemed most likely by the actuary, is insufficient. Similarly, a simple extrapolation of recent rates is not enough. Several different paths need to be tested in the calculations.

   The paths of interest rates, and the projection period used in the tests, should extend far enough into the future to provide for the major portion of the future runout of insurance cash flows from the contractual obligations on the valuation date as well as future investment cash flows from assets held on the valuation date. Paths to be tested should include at least one with future interest rates higher than that prevailing on the valuation date, and at least one with lower future interest rates. A useful test is to assume a path with rates increasing (or decreasing) during the period immediately following the valuation date, followed by a period of decreasing (or increasing) rates, and then to repeat this cycle into future periods. In most practical situations it is expected that more than three paths will be tested. A level path of future interest rates may also be useful as a reference.

   Tests should cover as many alternative interest rate paths as the actuary deems necessary to generate an understanding of the dynamics relating the insurance and investment cash flows. The range of paths tested should be broad enough to enable the actuary to form an opinion that the cash flows do make a good and sufficient provision for the contractual obligations under the policies and contracts.

   Grouping approximations, modeling and other acceptable actuarial techniques may be employed.

6. After completing the year-by-year projections, the actuary needs to accumulate or discount these results to arrive at a basis for expressing his or her opinion. One such approach is described below.

The insurance and investment cash flows could be added together (or netted) for each future year or other unit of time in the projections and the results accumulated forward to a common date, or the insurance and investment cash flow streams may be accumulated separately, and then combined on the common date.

The rates used to accumulate the cash flow streams should be the set of interest rates, and related durations for investment of future cash flow, assumed to be earned under that particular scenario.

One possible approach would be to project the total cash flow, including insurance and investment cash flows, with reinvestment of net positive cash flows during the projection period and borrowing or selling assets to cover net negatives, and then determine the "market value" of any remaining assets and/or borrowed funds at the end of the projection period. Such market value would be based on the assumption that interest rates after such a date would be frozen at the prevailing rate on that date which, though not necessarily a valid assumption, should not materially impact on the overall calculations.

If the "net market value" of remaining assets and borrowed funds on such date exceeds the value of the liabilities on that date, the cash flows would be deemed to be good and sufficient to meet the contractual obligations on that interest rate path; if not, the cash flows would be deemed not sufficient on that path.

7. An actuary stating an actuarial opinion that the anticipated insurance and investment cash flows make good and sufficient provision for the contractual obligations of the company under such contracts is expressing a personal opinion for which the actuary takes full responsibility. The actuary stating the opinion will ordinarily make use of other personnel to carry out assignments relative to the matters which the opinion covers and may have another actuary perform the calculations. Even in this latter case, however, the actuary stating the opinion is responsible for the opinion and cannot delegate that responsibility to the actuary who undertakes the calculations.

In forming such an opinion, the actuary should select the actuarial assumptions used by comparison with plausible sets of adverse circumstances, including plausible paths of future interest rates, and in relation to the time periods over which such circumstances can plausibly be expected to prevail. The adequacy of the future cash flows and the advancing of an opinion by the actuary that said cash flows do indeed make good and sufficient provision for the unmatured obligations being reviewed requires that the projected cash flows be sufficient under all plausible paths of future interest rates, combined with other assumptions which contain margins to cover reasonable fluctuations from expected assumptions. The actuary's opinion does not imply that the cash flows would be adequate under every conceivable adverse circumstance, no matter how remote. Good actuarial practice does not require that the actuary's tests include paths of future interest rates that, while possible, can be considered unlikely or not plausible. The results of tests of such paths, if performed, may properly be excluded from the tests upon which the actuary bases his or her opinion, but should be described by the actuary in a report to company management.

8. If the amount of assets identified as currently held by the company with respect to its Interest-Indexed Universal Life Insurance contracts needs to be greater than the amount of the statutory reserves for such business in order for the actuary to express an opinion that the cash flows make good and sufficient provision for the contractual obligations, the amount of such assets and reserves should be disclosed in the opinion. If, for companies where Interest-Indexed Universal Life contracts comprise a material portion of their total business, the level of future shareholder or policy holder dividends would likely need to be reduced in the future if the amount of such excess were added to statutory reserves, this likelihood should be disclosed by the actuary in a report to company management.