EXPOSURE DRAFT

CONSOLIDATED STANDARDS OF PRACTICE – PRACTICE-SPECIFIC STANDARDS FOR INSURERS

COMMITTEE ON CONSOLIDATED STANDARDS OF PRACTICE

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Canadian Institute of Actuaries • Institut Canadien des Actuaires

MEMORANDUM

TO: All Fellows and Associates of the Canadian Institute of Actuaries

FROM: Geoff Guy, Chairperson of the Practice Standards Council

DATE: March 18, 2002

SUBJECT: Exposure Draft on Consolidated Standards of Practice – Insurers Section

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Attached is a copy of the above ("CSOP Insurers Standards" or "this draft") for your review and comments. This draft will eventually be Sections 2100-2500 of the Consolidated Standards of Practice "CSOP." It should be read with the Consolidated Standards of Practice—General Standards ("CSOP General Standards").

This draft, together with the CSOP General Standards, is intended to replace the following standards:

Property and Casualty only

Recommendations for Property-Casualty Insurance Company Financial Reporting (January 1990)

Provision for Adverse Deviations—Property and Casualty Insurance Companies (November 1993)

Life only

Standards of Practice for the Valuation of Policy Liabilities of Life Insurers (October 2001)

Both Life, and Property and Casualty

The Appointed Actuary's Report for Insurance Company Published Financial Statements (December 1997)

Standards for the Appointed Actuary of Insurance Companies (June 1992)

Dynamic Capital Adequacy Testing (December 1998)

Changes from Discussion Draft

The Discussion Draft (document 20149) was distributed to members on June 8, 2001. The Exposure Draft reflects comments from the following sources:

Comments from members

At the Annual Meeting in June 2001, there were two sessions (one directed towards Life Insurance, one directed towards P&C Insurance). Most of the questions were about interpretation. Following the meeting, Charles McLeod wrote to all those who spoke asking if their questions or comments had been resolved satisfactorily. Four of those people made written comments.

At the time of publication of the Discussion Draft, all members were invited to comment by the middle of August 2001 (subsequently extended to the middle of September 2001). This resulted in an additional four written comments. Where it was considered appropriate, changes were made to the draft standards to reflect the eight members' comments. In all cases, a letter to the member was sent either stating that a change would be made or explaining why a change would not be made.

Comments from CIA legal counsel

The CIA's legal counsel was invited to comment on the Discussion Draft and this prompted some additional changes, mainly to improve clarity or grammar.

Comments from insurance practice committees

A draft Exposure Draft was prepared and sent to the four insurance practice committees on October 24, 2001. At the invitation of the P&C Insurance Financial Reporting Committee, Ken Clark and Charles McLeod attended a meeting of the P&C Insurance Financial Reporting Committee on November 5, 2001, and received some helpful verbal comments. Written comments were received from the other three practice committees. The result was a revised Exposure Draft that was distributed to the four practice committees on December 18, 2001. This prompted a very small number of changes and another Exposure Draft was distributed to the practice committees on January 14, 2002. Each of the four insurance practice committees has voted, by a two-thirds majority, to endorse publication of this Exposure Draft.

Endorsement by Consolidated Standards of Practice Committee and approval by the Practice Standards Council

The Exposure Draft has been endorsed by a two-thirds majority by the Committee on Consolidated Standards of Practice, and has been approved for distribution by the Practice Standards Council.

The changes made to the Discussion Draft can be identified by the blacklined version, but generally represent one of three types:

1. Changes intended to provide more clarity, or grammatical changes. No material changes to the standards occur as a result of these changes.
2. Changes requested by CLIFR to reflect the change during 2001 to Section 4.9 of the Life SOP (all of these changes are in Section 2300).

3. Changes made at the request of the P&C Insurance Financial Reporting Committee. The most significant changes are:

    - Definition of the "term of the liabilities" for a property and casualty insurance policy (Section 2130.21). This was missing from the Discussion Draft.

    - Addition of 2210.02 that states "Notwithstanding paragraph 2130.04, until standards have been developed the actuary may ignore taxes in determining policy liabilities for property and casualty insurance." The current P&C standards are silent on how tax should be reflected and we do not think it appropriate for current standards to change without more guidance as to how tax should be reflected. The Exposure Draft is consistent with current standards.

Following the exposure period, and any revisions resulting from comments received form members and practice committees, it is expected that the Insurers Standards will be issued in final form. The due process for approval of these standards is the old due process – the so-called "interim due process."

Please take the time to read the Exposure Draft and make your comments, both positive and negative, within the intended exposure period. Comments should be sent by mail, fax, or e-mail, to Charles McLeod, the member of the Committee on Consolidated Standards of Practice responsible for coordinating responses to this draft, at his *Yearbook* address.

The comment deadline for this Exposure Draft is July 15, 2002, but earlier comment is encouraged. In addition, we welcome your comments and participation at the June 2002 Annual Meeting, at which there will be two sessions for discussion of this Exposure Draft, one for P&C and one for life insurance.

2000—INSURERS

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2100 VALUATION OF POLICY LIABILITIES: ALL INSURANCE

2110 SCOPE

.01 The standards in ~~this section~~ Section 2000 apply to the valuation of the policy liabilities for an actuary's report in an insurer's published financial statements if those statements are in accordance with generally accepted accounting principles. 1210.04

.02 The standards in this section apply to all kinds of insurance. The standards in the two following sections apply respectively to

> property and casualty insurance; that is, to insurance with respect to property (for example, fire and marine insurance) and with respect to the actions of individuals and corporations (for example, liability and fidelity insurance) and 2200
>
> life and health insurance (accident and sickness); that is, to insurance with respect to the life and health of persons other than corporations.

2300

The standards in this section do not apply to post-employment benefit plans covered by the Practice Specific Standards for Post-Employment Benefit Plans.

.03 Sometimes, however, techniques described in one section may be useful for the insurance to which the other section applies. For example, while a simple technique is usually appropriate for valuation of life and health insurance claim liabilities, the more sophisticated techniques for valuation of property and casualty insurance claim liabilities may be appropriate for life and health insurance whose claim development is complex. Another example is that a simple technique may be appropriate for travel insurance sold by property and casualty insurers.

~~4.1~~2120 EXTENSION OF SCOPE 1230

.01 The standards in Section 2000 ~~this section~~ also apply to an actuary's report in the published financial statements of a quasi-insurer if those statements are in accordance with generally accepted accounting principles. The actuary would modify the standards to take account of any substantive difference between that quasi-insurer and an insurer; for example, the quasi-insurer's liabilities may be permitted to be less than fully funded. That report would describe the modifications to the standards and their implications.

.02 In this part, "quasi-insurer" means an entity which assumes risks which an insurer may assume, without having the legal form of an insurer. Examples of a quasi-insurer are 2140.21

> a federal or provincial crown corporation or agency acting in a capacity similar to a property and casualty insurer,
>
> a reciprocal insurance exchange,
>
> a provider of extended warranties, and
>
> a ~~self-insured professional indemnity fund.~~self-funding mechanism, such as a facility association.

.03 The standards in this section may also provide useful guidance for an actuary's report on the valuation of liabilities for an enterprise which is not an insurer but whose operations include benefits which an insurer may provide~~; for example, an employer who self-funds death or disability benefits for its employees or retired~~. 2110.02

.04 The standards in this section may also provide guidance for a valuation in accordance with a different basis of accounting; for example, where the policy liabilities are calculated in accordance with regulatory prescription which differs from accepted actuarial practice and generally accepted accounting principles.

~~4.1~~2130 METHOD

.01 *The actuary should value the policy liabilities for the balance sheet and the change in those liabilities for the income statement.*

.02 *The actuary should co-ordinate the valuation with the insurer's accounting policy as respects the choice between going concern and wind-up accounting, and so that the policy liabilities and other items in the balance sheet*

are consistent,

avoid omission and double counting, and

conform to the presentation of the income statement.

.03 *The relevant policies for the valuation are those which are in force at the balance sheet date, including those whose issue is then committed, or which were inforce earlier and which will generate cash flow after the balance sheet date.*

.04 *The policy liabilities in respect of each of the relevant policies should comprise the net cash flow after the balance sheet date from the premiums, benefits, claims, expenses, and taxes*[~~1~~] *which are incurred during the term of its liabilities.* 2210.02 2320.04

.05 *The comprised cash flow should include the effect of*

retrospective premium, commission, and similar adjustments,

experience rating refunds,

reinsurance ceded,

subrogation~~,~~ and salvage,

the exercise of policyholder options, and

the deemed termination at the end of the term of its liabilities of each policy then in force.

[~~1~~] ~~The actuary's work on account of taxes in a P&C insurer is currently minimal, partly because premium taxes are entirely incurred at issue of policies, but mainly because income tax timing differences are usually provided by (undiscounted) GAAP future tax assets and liabilities. The latter will change, however, when the regulatory obstacle to discounting is removed, so that policy liabilities may be reported entirely in accordance with accepted actuarial practice. When that happens, standards like those for the life side may become appropriate on the P&C side as well.~~

.06 *The valuation should take account of the time value of money.* [effective date to be determined].

Definitions

.07 "Policy" includes a financial instrument which is substantively like a policy, such as a reinsurance agreement or an annuity contract, and includes a commitment to issue a policy.

.08 "Policyholder" includes an individual insured under a group policy, a claimant, a beneficiary, an applicant for a policy, and a customer of a non-insurance service deemed to be a policy.

.09 "Premiums" include income equivalent to premiums, such as management fees, and cost of insurance charges.~~Historical cost vs. prospective accounting~~

~~The trend in accepted actuarial practice, andperhaps in international accounting standards, is toward prospective accounting; i.e., to take account of only future cash flow and to take no account of any past cash flow~~. ~~conflict with the prospective valuation of policy liabilities. There is, for example, no logical place for a deferred policy acquisition expenseasset in a balance sheet if its liabilities asset, whose recoverability is expected to be financed by a part of that cash flow~~. ~~Generally accepted accounting principles retain, however, elements of historical cost accounting which permit such an asset in the balance sheet of a property and casualty insurer and, before 2001, a life insurer[2]. Such an asset is acceptable if the actuary avoids double counting by adjusting the policies liabilities upward by its amount. If in the absence of acquisition or other expense which a life insurer expects to defer and to amortize from future cash flow, the calculation of the policy liabilities would not take account of all future cashflow~~. ~~The inconsistency — in that example — policy liability upward by the amount of future cash flow comprised in their prospective valuation but needed to amortize a related deferred policy acquisition expense asset determined by the accountant in accordance with historical cost accounting~~. ~~The amount of upward adjustment take account of all future cash flow, but if in fact there is such expense, then the actuary would consider extending the term of its liabilities to permit its amortization~~.

~~[2] As matters now stand:~~

~~For P&C insurers, there has been no change in the traditional practice to establish an asset which defers and amortizes acquisition expense. As the calculation of policy liabilities typically takes account of all future cash flow, the actuary adjusts the amount of those liabilities upward by the amount of the asset.~~

~~For life insurers, the need for that traditional practice was lessened by the adoption of the policy premium valuation method and, just recently, was eliminated completely by the CICA's amendment to its Accounting Guideline 9. Current CIA standards do not necessarily take account of all future cash flow, but the actuary may extend the term of the liabilities to take account of additional cash flow in order to permit deferral and amortization of acquisition and similar expense which would otherwise go unamortized. See 2320.22 in these standards and the 13 July 2001 Amendment to Section 4.9 of the Standards of Practice for the Valuation of Policy Liabilities of Life Insurers by Geoff Guy on behalf of the Practice Standards Council.~~

~~In the longer term, there may be further change on both the P&C side and the life side as a result of the emerging standards of the International Accounting Standards Board, which are fully prospective.~~

The insurer's accounting policy

~~.11~~.10 The preparers of the financial statements make a choice between going concern and wind-up accounting. The actuary would conform the valuation to that choice. If the actuary believes the choice to be inappropriate, then, after consultation with the auditor, he or she would so report. Going concern accounting is appropriate for an insurer ~~which~~that is expected to remain open to new business and in satisfactory financial position indefinitely. Going concern accounting is also appropriate for an insurer which is expected to become closed to new business, but to continue in a satisfactory financial position, either indefinitely or until an increase in capital, combination with another insurer in a satisfactory financial condition, or transfer of its policies to such an insurer brings financial relief. 1450

~~.12~~.11 Use of the terms "policy liabilities," "premium liabilities," and "claim liabilities" is desirable in financial statements, but the choice of their terminology and their itemisation is a management decision. What matters is that the actuary identify, value, and report on all the policy liabilities, whatever they may be called in the financial statements. The classification between premium and claim liabilities is usually evident but is in any case less important than assurance that **all** policy liabilities have been identified and valued.

~~.13~~.12 Policy liabilities consist of premium liabilities and claim liabilities. Claim liabilities are those in respect of cash flow after the balance sheet date from benefits and claims incurred on or before that date, and their related expenses and taxes; i.e., all of the cash flow, excluding the portion paid before the balance sheet date. Premium liabilities are those in respect of all other cash flow; i.e., that from premiums, benefits, claims, and their related expenses and taxes, incurred after the balance sheet date.

~~.14~~.13 The policy liabilities reported in the insurer's balance sheet may be either net of the value of recoveries which are expected from reinsurance ceded or gross of that value. In the latter case, the value is recorded as an asset. Fair presentation of the reported policy liabilities requires the amount of that asset to be appropriate. The recovery on account of reinsurance ceded would take account of not only the reinsurer's share of claims but also reinsurance commissions, allowances, and retrospective premium adjustments. 2140.01

~~.15~~.14 The policy liabilities reported in the insurer's balance sheet exclude deposit liabilities of segregated funds but include any related liabilities of the general fund, such as a liability for capital guarantees of amounts in segregated funds.

~~.16~~.15 The insurer's accounting policy may report amounts related to the relevant policies and the assets which support their policy liabilities, such as

deposit liabilities (for example, policyholder dividends on deposit),

incurred but unpaid items (for example, taxes incurred but not paid and policyholder dividends due but not paid),

future tax liabilities and assets (for example, those in connection with the timing differences between accounting and tax liabilities),

unamortized realized capital gains,

receivables from, payables to, and deposits by reinsurers,

the offset to gross liabilities on account of reinsurance ceded and ~~retrocession~~ retroceded,

amounts recoverable from policyholders,

asset impairment, and

deferred policy acquisition expenses,

either as part of the policy liabilities or as separate items in the balance sheet or as a mixture of the two. The actuary would value the policy liabilities so that,

in the aggregate, the policy liabilities and those separate items are consistent and avoid omission and double counting, and

the separate reporting of those items does not affect the insurer's capital (i.e., assets minus liabilities).

~~.17~~.16 As respects consistency, the actuary would, for example, ensure that the policy liabilities

provide for any risk of asset depreciation (C-1 risk) and of interest rate change (C-3 risk) for any deposit liabilities which the actuary did not value and which are separately reported without such provision, and

provide consistently for cash flow gross of reinsurance and reinsurance cash flow, except that reinsurance cash flow would also take account of the financial condition of the reinsurer.

~~The recovery on account of reinsurance ceded would take account of not only the reinsurer's share of claims but also reinsurance commissions, allowances, and retrospective premium adjustments.~~

~~.18~~.17 As respects double counting and omission, the actuary would, for example, ~~assure~~ ensure that

the same assets are not allocated twice to support liabilities, and

~~the amortization of two assets on the asset side of the balance sheet – for example a deferred policy acquisition expense and an accrued experience deficit – does not depend on the same cash flow,~~

provision for asset depreciation (C-1 risk) in valuing the policy liabilities does not duplicate any provision for asset depreciation deducted from the asset side of the balance sheet. ~~, and an item of deferred policy acquisition expense is not deducted in valuing the policy liabilities.~~

Relevant policies

~~.19~~.18 The relevant policies for the valuation are those which are in force at the balance sheet date, including those whose issue is then committed, or which were inforce earlier and which will generate cash flow after the balance sheet date. There are no policy liabilities in respect of other policies expected to be issued after that date, whether or not they are expected to be profitable.

~~.20~~.19 There usually are both premium liabilities and claim liabilities in respect of policies which are inforce at the balance sheet date.

~~.21~~.20 There may be claim liabilities in respect of policies which are not inforce at the balance sheet date as a result of outstanding claims incurred while they were inforce. There may be premium liabilities in respect of those policies as a result of the right of policyholders to reinstate them, or of their unpaid

retrospective premium, commission, and similar adjustments,

experience rating refunds, ~~and~~

reinsurance ceded, and

subrogation and salvage.

Term of the Liabilities

~~.22~~.21 The term of the liabilities of a property and casualty insurance policy ends at its expiry, which usually is within one year of the balance sheet date, unless

the policy has been cancelled, in which case that term ends at the effective date of cancellation, or

there is insurer commitment to renewal or extension, in which case the guidance for life and health insurance policies may be useful.

Expiry may be more than one year after the balance sheet date for a policy whose contractual term exceeds one year; for example, an extended warranty policy which provides coverage for several years after expiry of the basic warranty.

Paragraphs 2320.16 through 2320.25 provide guidance on determination of the term of the liabilities of a life or health insurance policy. 2320.16 2320.25

Cash flow comprised in the policy liabilities

~~.23~~.22 The policy liabilities in respect of a relevant policy comprise all of that policy's cash flow after the balance sheet date, except for cash flow from premiums, benefits, claims, expenses, and taxes which are **incurred** after the term of the policy's liabilities.

~~.24~~.23 The tax cash flow is limited to that generated by premiums, benefits, claims, and expenses, and by the assets which support policy liabilities. The expense cash flow is limited to that generated by the relevant policies, including overhead allocations. The tax and expense cash flow exclude, for example, tax on investment income from, and the investment expense of, assets which support capital.

~~.25~~.24 The comprised cash flow for a policy may extend beyond the term of its liabilities as a result of lag between incurral and the resultant cash flow. The extension may be prolonged, for example, for a claim payable in instalments under long term disability insurance, and a claim under product liability insurance which has a long settlement period.

Retrospective premium, commission, and similar adjustments

~~.26~~.25 In determining the value of a contractual right of the insurer to future premiums which depend on past claims experience, the actuary would take account of credit risk of the policyholder.

Experience rating refunds

~~.27~~.26 The liability for experience rating refunds would take account of

the assumptions in calculating the policy liabilities in respect of those matters which determine experience rating refunds,

the difference between the basis for policy liabilities and the corresponding basis in the experience rating, and

any cross-rating across coverages in the experience rating.

~~.28~~.27 The experience rating refund element of the policy liabilities would include provision for adverse deviations only for

risk of misestimation (C-2 risk) of interest rates and risk of interest rate change (C-3 risk) and

uncertainty in the calculation of the experience rating refund.

~~.29~~.28 The experience rating refund element of the policy liabilities would not be negative except to the extent that in settlement it may be offset against another liability or recovered from policyholders.

Reinsurance ceded and retroceded

~~.30~~.29 The recovery on account of reinsurance ceded would take account of the financial condition of the reinsurer.

~~.31~~.30 The actuary would assume that the insurer and the reinsurer each exercises its control over recapture or commutation to its advantage.

~~.32~~.31 The sign (positive or negative) of an assumption's margin for adverse deviations may depend on that assumption's effect on recapture or commutation. 1740.48

Subrogation and salvage

~~.33~~.32 The actuary would either net subrogation and salvage amounts against claims or value them as a separate item, depending on the insurer's accounting policy.

Exercise of policyholder options

~~.34~~.33 Examples of policyholder options are

the conversion of group insurance or individual term insurance,

the election of a settlement option in individual life insurance,

the purchase of additional insurance or coverage without underwriting, and

the selection of the amount of premiums for universal life insurance.

Deemed termination of remaining policies[3]

~~.35~~.34 The comprised cash flow in respect of a policy which is deemed to terminate at the end of the term of its liabilities would include any amount then payable by the insurer in the event of its termination, modified to take account of the fact that the termination is deemed and not actual. For example, the modification would

forego a surrender charge deducted at an actual termination from the policy's account value to calculate its cash value,

forego a deduction at an actual termination from the policy's unearned premium to calculate its premium refund, and

anticipate a persistency bonus becoming payable at a date after the end of the term of the policy's liabilities if the policy remains in force to that date.

[3] This item amplifies the last bullet of 2130.05, which is intended, but which is not explicit, in the current standards on either the life or the P&C side. The practice committees have agreed that it should be explicit.

Time value of money

~~.36~~.35 In this context, "supporting assets" means the insurer's assets and asset commitments which support its policy liabilities.

~~.37~~.36 To take account of the time value of money is to express the year-by-year forecast of the cash flow comprised in the policy liabilities as an equivalent single amount at the balance sheet date. There are two methods of doing so – the Canadian asset liability method and the actuarial present value method. In ~~A general method to do so is~~ the Canadian asset liability method. ~~In that method~~, the amount of the policy liabilities is the amount of their supporting assets which reduce to zero at the last cash flow in the forecast of the cash flow from the assets and liabilities. The Canadian asset liability method is a "roll forward" method applicable to any scenario. The actuarial present value method is a "pull backward" method which produces the same result as the Canadian asset liability method for a particular scenario if present value factors, v^t, exist which replicate the investment return assumptions of that scenario. Such factors do not exist for complex scenarios; for example, a scenario which includes a spike in mortgage lending rates in forecast year 5. ~~The actuarial present value method is thus a subset of the Canadian asset liability method.~~ 2320

~~.38~~.37 The discount rates or the forecast of supporting assets, as the case may be, would take account of

the supporting assets at the balance sheet date and the insurer's policy for asset-liability management after that date and

assumptions about investment return after the balance sheet date.

~~.39~~.38 The actuary would value the policy liabilities so that, in the aggregate, they and the other policy-related items in the balance sheet take account of the time value of money.

~~.40~~.39 In some cases, regulation requires policy liabilities to be valued without taking account of the time value of money; i.e., to be valued as the sum of, rather than the present value of, the cash flow after the balance sheet date. For such a case, the actuary would make a dual valuation of policy liabilities:

A in accordance with accepted actuarial practice and

B in accordance with accepted actuarial practice but not taking account of the time value of money, with the provision for adverse deviations appropriately reduced.

~~.41~~.40 If A is acceptable under the regulation (which would usually be the case if A is greater than or equal to B), then the actuary would report A without reservation on account of the regulation.

~~.42~~.41 If A is not acceptable under the regulation (which would usually be the case if A is less than B), then the actuary would report B with reservation. 1310 1820.23

~~4.1~~2140 REPORTING

.01 *The actuary's report should describe*

the valuation and presentation of policy liabilities for the insurer's balance sheet and income statement,

the actuary's opinion on the appropriateness of those liabilities and on the fairness of their presentation, and

the actuary's role in the preparation of the insurer's financial statements if that role is not described in those statements or their accompanying management discussion and analysis.

.02 *If*

the financial statements (or their accompanying management discussion and analysis) describe the actuary's role in their preparation and

the actuary can report without reservation,

then the actuary's report should conform to the standard reporting language, consisting of

a scope paragraph, which describes the actuary's work, and 1810

an opinion paragraph, which gives the actuary's favourable opinion on the valuation and its presentation.

.03 *Otherwise, the actuary would modify the standard reporting language to report with reservation.* [effective date to be determined]

Accounting in the balance sheet

.04 The amount of the policy liabilities is usually the largest amount in the balance sheet, so that its itemisation is desirable.

.05 The reference to "policy liabilities" in the standard reporting language is adequate if

the notes to the financial statements or their accompanying management discussion and analysis verbally define "policy liabilities" or

the balance sheet presents their total amount as a separate item.

Accounting in the income statement

.06 The standard reporting language implies that the income statement accounts for the total change in the policy liabilities during the accounting period. That accounting is direct in the case of a life insurer's actuarial liabilities, whose change is presented as a separate item in the income statement. That accounting is indirect in the case of other policy liabilities, because their change is not separately presented, but is included within other items in the income statement. For example, the item, incurred claims, equals

claims and claim expenses paid during the accounting period plus

claim liabilities (which are part of the policy liabilities) at the end of the accounting period, minus

claim liabilities at the beginning of the accounting period.

Disclosure of unusual situations

.07 The items ~~which~~ that the actuary values for the financial statements may be misleading if the financial statements do not present them fairly. The actuary's report is a signal to the reader of the financial statements that there is, or is not, fair presentation.

.08 In an unusual situation, fair presentation may require explanation of an item which the actuary values for the financial statements. Usually, the notes to the financial statements would provide that explanation, including, where appropriate, disclosure of the situation's effect on income and capital. Failing such explanation, the actuary would provide it by a reservation in reporting.

.09 The question, "Will explanation enhance the user's understanding of the insurer's financial position?" may help the actuary to identify such a situation. Unusual situations may include ~~1750~~

capital appropriated on the actuary's advice;

off-balance-sheet obligations, for example, contingent policy liabilities in connection with market conduct;

restatement of items for preceding accounting periods;

the impracticality of restating any items which are reported in current period financial statements and which were reported inconsistently in preceding period financial statements; 1750.05

inconsistency among accounting periods; 1750.0~~53~~

an unusual relationship between the items in current period financial statements and the expected corresponding items in future period financial statements;

a change in the method of valuation which does not have an effect in the current accounting period but which is expected to have an effect in future accounting periods;

allocation of expense or investment income to a participating account (if reported in the financial statements) other than in accordance with the method approved by the actuary and the insurer's board of directors;

a subsequent event; and

a difference between the insurer's present practice and that which the actuary assumed in valuing the policy liabilities.

.10 An example of the latter is the actuary's assumption of a policy for setting dividend scales which differs from the insurer's current policy. The actuary would not, however, report the assumption of a dividend **scale** which is in accordance with an unchanged dividend **policy**. The same applies to a difference between current and assumed policy for setting non-guaranteed cash value scales and premium rates for adjustable policies.

Consistency among accounting periods

.11 Financial statements usually report results for one or more preceding accounting periods in addition to those for the current period. Meaningful comparability requires the financial statement items for the various periods to be consistent through the restatement of preceding period items if they were inconsistently reported in the preceding period financial statements. A less desirable alternative to restatement is disclosure of the inconsistency.

.12 A change in the method of valuation creates an inconsistency. If a change in the assumptions for valuation reflects a change in the expected outlook, then it does not create an inconsistency although, if its effect is major, then fair presentation may require its disclosure.

.13 A change in assumptions which results from the application of new standards may create an inconsistency.

Communication with the auditor

.14 Communication with the auditor is desirable at various stages of the actuary's work. These include

use of work in accordance with the CIA/CICA *Joint Policy Statement*,

the drafting of common features in the auditor's report and actuary's report,

the drafting of a report with reservations,

the presentation of the policy liabilities, and

the treatment of subsequent events.

Description of the actuary's role

.15 The actuary would report a description of his or her role in the preparation of the insurer's financial statements only if the financial statements or their accompanying management discussion and analysis do not provide that description.

.16 Here is an illustrative description:

"The Appointed Actuary is

appointed by the [Board of Directors] of [the Company];

responsible for ensuring that the assumptions and methods for the valuation of policy liabilities are in accordance with accepted actuarial practice, applicable legislation, and associated regulations and directives; and

required to provide an opinion on the appropriateness of the policy liabilities at the balance sheet date to meet all policyholder obligations of [the Company]. The work to form that opinion includes an examination of the sufficiency and reliability of policy data and an analysis of the ability of the assets to support the policy liabilities."

Standard reporting language

.17 Here is the standard reporting language:

Appointed Actuary's Report

To the policyholders [and shareholders] of [the ABC Insurance Company]:

I have valued the policy liabilities of [the Company] for its [consolidated] balance sheet at [31 December XXXX] and their change in the statement of income for the year then ended in accordance with accepted actuarial practice, including selection of appropriate assumptions and methods.

In my opinion, the amount of policy liabilities makes appropriate provision for all policyholder obligations and the [consolidated] financial statements fairly present the results of the valuation.

[Montreal, Quebec] [Mary F. Roe]
[Report date] Fellow, Canadian Institute of Actuaries

.18 The language in square brackets is variable and other language may be adjusted to conform to interim financial statements and to the terminology and presentation in the financial statements.

.19 An auditor's report usually accompanies the financial statements. Uniformity of common features in the two reports will avoid confusion to readers of the financial statements. Those common features include:

Addressees. Usually, the actuary addresses the report to the policyholders of a mutual insurer and to both the policyholders and shareholders of a stock insurer.

Years referenced. Usually, the actuary's report refers only to the current year, even though financial statements usually present results for both the current and prior years. 1520 1810 1820.29 1820.30

Report date. If the two reports have the same date, then they would take account of the same subsequent events.

Reservations in reporting

.20 The examples which follow are illustrative.[4] 1820.23

Quasi-insurer

.21 Here is an example of a report for a quasi-insurer:

> I have valued the outstanding claim liabilities of [the Professional Indemnity Plan] for its balance sheet at [31 December XXXX] in accordance with accepted actuarial practice, including selection of appropriate assumptions and methods.
>
> As explained in Note [XX], the [Plan's] liabilities are not fully funded.
>
> In my opinion, and having regard for Note [XX], the amount of policy liabilities makes appropriate provision for all of the [Plan's] outstanding claims and the financial statements fairly present the results of the valuation.

Note [XX] would quantify and describe the actuary's assumptions with respect to the asset shortfall, describe the plan, if any, for its funding, and explain its implications for the financial security of participants and claimants.

New appointment

.22 A newly appointed actuary who is unable to use the predecessor actuary's work, but who has no reason to doubt its appropriateness, would modify the standard reporting language as follows: 1810

> I have valued the policy liabilities of [the Company] for its [consolidated] balance sheet at [31 December XXXX] and, except as noted in the following paragraph, their change in the statement of income for the year then ended in accordance with accepted actuarial practice, including selection of appropriate assumptions and methods.

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[4] Section 12 of the revised December 1997 *The Appointed Actuary's Report for Insurance Company Published Financial Statements* is an example of a reservation titled "Departure from generally accepted accounting principles." The new exposure draft omits that example. The Committee believes that, as matters now stand in Canada, the only reason to depart from GAAP is an overriding regulation, which is dealt with in the general standards. The new exposure draft includes an example of reporting a valuation of a quasi-insurer.

> I became the [appointed actuary] during the year and was unable to confirm the appropriateness of the valuation for the preceding year.
>
> In my opinion, the amount of policy liabilities makes appropriate provision for all policyholder obligations and the [consolidated] financial statements fairly present the results of the valuation. For the reason stated in the previous paragraph, I am unable to say whether or not those results are consistent with those for the preceding year.

.23 If the actuary doubts the appropriateness of the predecessor actuary's work as a result of a review of it, then the actuary would consider a more serious reservation.

Impracticality of restatement

.24 The actuary would if necessary restate the preceding year valuation to be consistent with the current year valuation. If it is not practical to restate the preceding year valuation, then the actuary would modify the opinion paragraph in the standard reporting language as follows:

> As explained in Note [XX], the method of valuation for the current year differs from that for the preceding year. In my opinion, except for that lack of consistency, the amount of policy liabilities makes appropriate provision for all policyholder obligations and the [consolidated] financial statements fairly present the results of the valuation.

.25 Note [XX] would usually explain the change in the basis of valuation, explain the impracticality of applying the new basis retroactively, and disclose the effect of the change on the opening equity at the beginning of the preceding year.

Valuation does not take account of time value of money

.26 If a regulation that policy liabilities be valued without taking account of the time value of money requires a reservation, then the actuary would modify the standard reporting language as follows:

> I have valued the policy liabilities of [the Company] for its [consolidated] balance sheet at [31 December xxxx] and their change in the statement of income for the year then ended in accordance with accepted actuarial practice, including the selection of appropriate assumptions and methods, except as described in the following paragraph.
>
> In accepted actuarial practice, the valuation of policy liabilities reflects the time value of money. Pursuant to the authority granted by the *Insurance Companies Act*, the Superintendent of Financial Institutions has directed that the valuation of some policy liabilities not reflect the time value of money. My valuation complies with that directive.
>
> In my opinion, the amount of policy liabilities makes appropriate provision for all policyholder obligations, except as noted in the previous paragraph, and the [consolidated] financial statements fairly present the results of the valuation.

Takeover of insurer with poor records

.27 If the insurer took over another insurer with poor records, then the actuary would modify the standard reporting language as follows:

> I have valued the policy liabilities of [the Company] for its [consolidated] balance sheet at [31 December XXXX] and their change in the statement of income for the year then ended in accordance with accepted actuarial practice, including selection of appropriate assumptions and methods, except as described in the following paragraph.
>
> During the year, [the Company] took over the assets, liabilities, and policies of [WWW Insurer], whose policy records are, in my opinion, unreliable. [The Company] is making but has not completed the necessary improvements. My valuation with respect to the policies taken over from [WWW Insurer] is therefore uncertain. Their policy liabilities comprise [N]% of the total policy liabilities at [31 December XXXX].
>
> In my opinion, except for the reservation in the previous paragraph, the amount of policy liabilities makes appropriate provision for all policyholder obligations and the [consolidated] financial statements fairly present the results of the valuation.

Liabilities greater than those calculated by the actuary

.28 If the financial statements of an insurer report policy liabilities which are greater than those calculated and reported by the actuary, and if the notes to those financial statements do not provide sufficient disclosure of the rationale for the greater liabilities, then the actuary would report as follows:

> I have valued the policy liabilities of [the Company] for its [consolidated] balance sheet at [31 December XXXX] and their change in the statement of income for the year then ended in accordance with accepted actuarial practice, including selection of appropriate assumptions and methods, except as described in the following paragraph.
>
> In my valuation, the amount of the policy liabilities is $[X]. The corresponding amount in the [consolidated] financial statements is $[Y].
>
> In my opinion, the amount of policy liabilities of $[X] makes appropriate provision for all policyholder obligations and, except as described in the preceding paragraph, the [consolidated] financial statements fairly present the result of the valuation.

2200 VALUATION OF POLICY LIABILITIES: P&C INSURANCE

~~4.1~~2210 SCOPE

.01 The standards in this section apply in accordance with subsections 2110 and 2120. 2110

.02 Notwithstanding paragraph 2130.04, until standards have been developed the actuary may ignore taxes in determining policy liabilities for property and casualty insurance. 2130.04

~~4.1~~2220 CLAIM LIABILITIES

.01 *The amount of the claim liabilities should be equal to the present value, at the balance sheet date, of cash flow on account of claims (and of related expenses and taxes) incurred before that date.* [effective date to be determined]

.02 The amount of claim liabilities consists of the following components

the amount of the case estimates,

a provision (which may be positive or negative) for development on reported claims, including claim adjustment expenses, and

a provision for incurred but unreported claims, including claim adjustment expenses.

.03 The development on reported claims compensates for the inadequacy or redundancy in case estimates.

.04 The incurred but unreported claims are those not yet reported to the insurer, including those reported but not yet recorded.

.05 The development on reported claims and the incurred but unreported claims need not be calculated separately. Some valuation methods calculate only their combined amount.

.06 The selection of valuation methods depends on the circumstances of the case. The actuary would usually consider several methods, each of which involves assumptions; e.g., an assumption that the settlement patterns of the available past claims experience are uniform and the same as those of the insurer's future claims experience. The actuary would where practical adjust the available past claims experience in order to ~~realise~~ recognize those assumptions~~, and would test their realisation before adopting a method~~.

.07 The actuary would consider the circumstances of the case in selecting assumptions. The available past claims experience may lack pertinence for assumptions about the insurer's future claims experience as a result of internal changes, such as changes in

1730.08
1730.10
1730.17

the insurer's underwriting practice,

its claims handling practice, including case estimate practice,

its reinsurance,

its data processing, and

its accounting,

and as a result of external changes, such as inflation and changes in

the judicial, regulatory, and legislative environment,

residual insurers, like the Facility Association.

.08 The past and future claims experience of a pool or association in which the insurer participates tends to be beyond the insurer's control and may differ from the insurer's own claims experience.

~~4.1~~2230 PREMIUM LIABILITIES

.01 *The amount of the premium liabilities (after deducting any deferred policy acquisition expense asset) should be equal to the present value, at the balance sheet date, of cash flow on account of premium development and of the claims, expenses, and taxes to be incurred after that date on account of the policies in force at that date or an earlier date.* [effective date to be determined] 2130.03

.02 The actuary would consider the standards for claim liabilities in selecting assumptions about claims.

.03 Expenses include both claim adjustment expenses and the expense of servicing policies.

~~4.1~~2240 PRESENT VALUES

.01 The expected investment return rate for calculation of the present value of cash flow is that to be earned on the assets which support the policy liabilities. It depends on

the method of valuing assets and reporting investment income,

the allocation of those assets and that income among lines of business,

the return on the assets at the balance sheet date,

the yield on assets acquired after the balance sheet date,

the capital gains and losses on assets sold after the balance sheet date,

investment expenses, and

1710.10

losses from default (C1 risk).

.02 The actuary need not verify the existence and ownership of the assets at the balance sheet date, but would consider their quality.

~~4.1~~2250 MARGIN FOR ADVERSE DEVIATIONS

.01 The standards in this subsection apply to the selection of a margin for adverse deviations in the assumptions for a valuation of policy liabilities by a single scenario valuation. 1740.39

.02 *The actuary should select a margin for adverse deviations for an assumption which is within the range defined by the low margin and the high margin for that assumption. The criteria for selection of that margin are the considerations for that assumption.*

.03 *The selected margin should tend toward the high margin to the extent that those considerations, viewed in the aggregate but considering their individual relative importance,*

have been unstable during the period covered by the experience data on which the selection of the corresponding expected assumption is based and the effect of that instability cannot be quantified, or

otherwise undermine confidence in the selection of the corresponding expected assumption,

and should tend toward the low margin to the extent that the opposite is the case.

.04 *The selected margin should vary*

between premium liabilities and claim liabilities,

among lines of business, and

among accident years, policy years, or underwriting years, as the case may be,

according to how those considerations so vary. [effective date to be determined]

Assumptions subject to margin

.05 The actuary would include margin in the assumptions for

~~C~~claims development,

~~R~~recovery from reinsurance ceded, and

~~I~~investment return rates~~, and internal claim adjustment expenses~~.

.06 The actuary would not usually include margin in the other assumptions. An ~~E~~examples of unusual circumstances which warrants an exception ~~are~~is:

~~Internal claim adjustment expense assumption: Recent major change in claims management practices~~

Salvage and subrogation assumption: Presentation as an asset separate from the claim liabilities.

Amounts of high and low margins

.07 The margin for claims development is a percentage of the claim liabilities excluding ~~internal claim adjustment expense and excluding~~ provision for adverse deviations.

.08 The margin for recovery from reinsurance ceded is a percentage of the amount deducted on account of reinsurance ceded in calculating the premium liabilities or claim liabilities, as the case may be, without provision for adverse deviations.

.09 The margin for investment return rate is a deduction from the expected investment return rate per year.

.10 The amounts of margin are:

	High	Low
Claims development	15%	2.5%
Recovery from reinsurance ceded	15%	Zero
Investment return rates	200 basis points	50 basis points

.11 Selection of a margin for adverse deviations above the high margin may be appropriate for unusually high uncertainty – for example, during the transition to new insurance coverages.

Considerations

.12 A consideration for an assumption generates lack of confidence in that assumption as a result of past or future instability of the consideration or a shortcoming in its quality, quantity, or performance. For example,

Instability in the guidelines for setting and reviewing case estimates may result in inconsistent development among accident years, and

A history of claim and coverage disputes with a reinsurer creates uncertainty of recovery of 100¢ in each dollar of the reinsurer's share of liabilities.

.13 The actuary would select and evaluate considerations for each assumption which are appropriate to the circumstances of the insurer, including

insurer practices, for example, the guidelines for setting and reviewing case estimates,

data, for example, the stability of claims frequency and average claim cost,

reinsurance, for example, the history of claim and coverage disputes with reinsurers,

investments, for example, the matching of assets and liabilities, and

the external environment, for example, the effect of regulatory change on claim settlements.[5]

[5] This is a condensed version of the highly detailed list of considerations in the present standards. The Committee on Property and Casualty Insurance Financial Reporting is, however, preparing an educational note which will provide a useful "check list" of considerations.

2300 VALUATION OF POLICY LIABILITIES: LIFE AND HEALTH (ACCIDENT AND SICKNESS) INSURANCE

~~4.1~~2310 SCOPE

.01 The standards in this section apply in accordance with subsections 2110 and 2120. 2110

~~4.1~~2320 METHOD

.01 *The actuary should calculate policy liabilities by the Canadian asset liability method.*

.02 *The amount of policy liabilities by that method for a particular scenario is equal to the amount of supporting assets at the balance sheet date which are forecasted to reduce to zero at the last cash flow in that scenario.*

.03 *The term of the liabilities should take account of any renewal, or any adjustment equivalent to renewal, after the balance sheet date if* 2320.16

the insurer's discretion at that renewal or adjustment is contractually constrained, and

policy liabilities are larger as a result of taking account of that renewal or adjustment.

.04 *In forecasting the cash flow which the policy liabilities comprise, the actuary should* 2130.05

take account of policyholder reasonable expectations, and

include policyholder dividends, other than the related transfers to the shareholders account and other than ownership dividends, in the comprised cash flow from benefits.

.05 *The actuary should calculate policy liabilities for multiple scenarios and adopt a scenario whose policy liabilities make sufficient but not excessive provision for the insurer's obligations in respect of the relevant policies.* 1740.04

.06 *The assumptions for a particular scenario consist of*

scenario-tested assumptions, which should include no margin for adverse deviations, and

each other needed assumption, whose best estimate should be consistent with the scenario-tested assumptions and which should include margin for adverse deviations.

.07 *The scenario-tested assumptions should include at least the interest rate assumptions.*

.08 *The scenarios of interest rate assumptions should comprise*

a base scenario which, unless otherwise promulgated, assumes continuance of reinvestment and inflation rates at the balance sheet date, and, unless there is explicit reason to assume otherwise, the insurer's then current investment strategy,

each of the prescribed scenarios in a deterministic application,

ranges which comprehend each of the prescribed scenarios in a stochastic application, and

other scenarios appropriate for the circumstances of the insurer. [effective date to be determined]

Liability grouping and asset segmentation

.09 The actuary would usually apply the Canadian asset liability method to policies in groups which reflect the insurer's asset-liability management practice for allocation of assets to liabilities and investment strategy. That application is a convenience, however, which would not militate against calculation of policy liabilities ~~which,~~that, in the aggregate, reflect the risks to which the insurer is exposed.

Other methods

.10 For a particular scenario, another method may be equivalent to or approximate the Canadian asset liability method. If the actuary uses that other method, then the calculation for multiple scenarios and the selection of one which makes sufficient but not excessive provision for the insurer's obligations would be the same as for the Canadian asset liability method.

Supporting assets

.11 In allocating assets to support liabilities, the actuary would preserve the connection between unamortized capital gains, both realized and unrealized, and the asset segments which generated them.

.12 The value of the assets which support policy liabilities at the balance sheet date would be their value in the insurer's financial statements; i.e., book value, taking account of accrued investment income and of adjustments for impairment, amortized unrealized capital gains, and amortized realized capital gains.

.13 The forecasted cash flow of the assets would take account of any related, off-balance sheet, financial instruments.

.14 The forecast of cash flow from taxes would take account of permanent and temporary ~~timing~~ differences between the amortization of capital gains in accordance with generally accepted accounting principles and in accordance with tax ~~rules.~~law.

.15 The assumed cash flow from policyholder dividends would avoid omission and double counting. For example, if the dividend scale includes distribution of a deferred realized capital gain (net of any corresponding future tax asset), then the assumed cash flow from policyholder dividends would exclude that distribution. In the opposite case, the assumed cash flow from policyholder dividends would provide for negative distribution of a deferred realized capital loss asset (net of any corresponding future tax liability). Such avoidance is appropriate only in the case of liabilities and would not be appropriate if the dividend scale included distribution of assets ~~which support capital or~~that support capital, or distribution of investment income ~~thereon.~~on assets that support capital. 2320.33 2110.01

Term of the liabilities

.16 If an element of a policy operates independently of the other elements, then it would be treated as a separate policy with its own term of liabilities. Examples are

a flexible premium deferred annuity where the interest guarantee and cash value attached to each premium are independent of those for the other premiums, and

a certificate of voluntary non-contributory association or creditor group insurance.

.17 The term of a policy's liabilities is not necessarily the same as the contractual term of the policy.

.18 In this context,

"renewal" means the renewal of an expired policy, with the insurer having discretion to adjust premiums or coverage for the new term,

"adjustment" means an insurer's adjustment to a policy's coverage or premiums equivalent to that in a renewal, and

"constraint" means a constraint on the insurer's exercise of discretion in renewal or adjustment which results from contractual obligations, legally binding commitments, and policyholder reasonable expectations. Examples of constraint are an obligation to renew a policy unless renewal is refused for all other policies in the same class, a guarantee of premiums, a guarantee of credited interest rate, a general account guarantee of segregated fund value, and a limitation on the amount of adjustment. "Constraint" would not include a price-competitive market expected at renewal or adjustment. 2320.26

.19 The term of a policy's liabilities takes account of all renewals and adjustments before the balance sheet date. Depending on the circumstances, that term may also take account of one or more renewals or adjustments after the balance sheet date.

.20 If the term of the liabilities is not evident, and if selection of a longer term would reduce policy liabilities, then the actuary would be cautious in making such a selection. On the other hand, if selection of a longer term would increase those liabilities, then the actuary would usually select the longer term. Substance would supersede form in the selection; for example, a universal life policy which is in form an annual premium life insurance policy may be in substance a single premium deferred annuity.

.21 The term of the liabilities of

a policy which has been cancelled by the insurer ends at the effective date of cancellation. 1520

a policy which has not been cancelled, but which is cancellable by the insurer at or before the date to which its premiums have been paid, ends at that date.

an individual annual premium life or accident and sickness insurance policy ends at the last day to which the policyholder may prolong its coverage without the consent of the insurer.

a certificate of group insurance if the group policy is in effect a collection of individual policies is the same as if it were an individual policy, unless contributions or experience rating of the group negate anti-selection by certificate holders.

.22 The term of the liabilities of any other policy ends at the earlier of

the first renewal or adjustment date at or after the balance sheet date at which there is no constraint, and

the renewal or adjustment date after the balance sheet date which maximizes the policy liabilities.

except that the actuary would extend such term solely to permit recognition of cash flow to offset acquisition or similar expenses

whose recovery from cash flow that would otherwise be beyond such ~~the~~ term was contemplated by the insurer in pricing the policy, and ~~whose balance would is amortized to zero over an appropriate term and using an appropriate method provided such balance is recoverable from the additional cash flow recognized, and where not fully recoverable, is written down to the recoverable amount, and~~

where the value of the additional cash flow recognized by such extension of the term cannot exceed the value of the remaining ~~unamortized~~ balance of acquisition or similar expenses.

The balance of acquisition or similar expenses would be written down ~~up~~to zero using an appropriate method. Such method would:

have a term consistent with the extended term established at inception,

have a write-down ~~up~~ pattern reasonably matched with the net cashflow available to offset these expenses at inception, and

be locked in, so the amount of write-down ~~up~~ in each period will not fluctuate from the expected amount established at inception provided such balance is recoverable from the additional cash flow recognized at the balance sheet date, and where not fully recoverable at the balance sheet date, is written down ~~up~~to the recoverable amount, with the expected amount of write-down in each future period proportionately reduced.

.23 That implies that the term ends at

the balance sheet date if the policy is continually renewable or adjustable without constraint,

the first renewal or adjustment after the balance sheet date if there is no constraint at that renewal or adjustment, and

a renewal or adjustment determined by testing for any other policy. The actuary would calculate the policy liabilities assuming that the term of its liabilities ends at each renewal or adjustment at or after the balance sheet date up to and including the first renewal or adjustment at which there is no constraint, and would select the term corresponding to the largest policy liabilities.

.24 A change in the outlook may provoke a change in the term of a policy's liabilities. For example, the constraint of a cost of insurance guarantee which previously lengthened the term of the policy's liabilities may no longer do so if the outlook for mortality improves. On the other hand, the constraint of a guaranteed credited interest rate which previously was considered innocuous may become meaningful, and thereby lengthen the term of the policy's liabilities, if the outlook changes to one of lower interest rates.

.25 For example, the term of the liabilities ends at

the balance sheet date for a daily interest rate deposit without minimum guarantee, an administrative services only (ASO) contract without expense guarantee, and the general account portion of a deferred annuity with segregated fund liabilities but without guarantees; for example, with no guarantee of the segregated fund value,

the first renewal of a single premium deferred annuity which is, in effect, a term deposit (i.e., having a credited interest rate guarantee for a stipulated period, say three years, beginning at the date of deposit, and no guarantee thereafter), ~~and~~

the first renewal (usually one year after the previous renewal) of a group policy which insures employee benefits, unless there is a constraint at that ~~renewal.~~renewal, and

the next renewal date or adjustment date even if there is a constraint at renewals and adjustments at and after that date, but the constraint is so weak that its operation does not increase policy liabilities.

Policyholder reasonable expectations

.26 The insurer's policies define contractually its obligations to its policyholders. The contractual definition may leave certain matters to the insurer's discretion, such as

the determination of policyholder dividends, experience-rating refunds, and retrospective commission adjustments, and

the right to adjust premiums.

.27 Matters left to the insurer's discretion implicitly include

underwriting and claim practices, and

the right to waive contractual rights and to create extra-contractual obligations.

.28 Policyholder reasonable expectations are the expectations which

may be imputed to policyholders as their reasonable expectations of the insurer's exercise of discretion in those matters, and

arise from the insurer's communication in marketing and administration, from its past practice, from its current policy, and from general standards of market conduct. Past practice includes the non-exercise of discretion; for example, long non-exercise without affirmation of a right to adjust premiums may undermine it. The insurer's communication includes policyholder dividend and investment performance illustrations at sale of a policy and that of intermediaries reasonably perceived as acting in its behalf.

.29 In selecting assumptions for the insurer's exercise of discretion in those matters, the actuary would take policyholder reasonable expectations into account. Taking account of policyholder reasonable expectations may affect not only the amount of policy liabilities but also disclosure in the financial statements.

.30 The determination of policyholder reasonable expectations is straightforward when the insurer's practice has been clear, unvarying, consistent with its communications, consistent with general standards of market conduct, and the insurer does not intend to change it. The actuary would discuss any other practice with the insurer, with a view to clarifying policyholder reasonable expectations.

.31 If the insurer makes a change which will eventually alter policyholder reasonable expectations, then the actuary would consider both the appropriate disclosure of the change in policyholder communication and the financial statements, and the time elapsed before the altered expectations ~~crystallise.~~crystallize.

.32 A dispute over policyholder reasonable expectations may lead to class action or other litigation by policyholders against the insurer, which may affect policy liabilities or generate contingent liabilities.

Policyholder dividends

.33 The assumed cash flow from policyholder dividends would be that from both periodic (usually annual) dividends and terminal and other deferred dividends, but excluding that from the related transfers from the participating to the shareholders account in a stock insurer.

.34 The assumed cash flow from policyholder dividends would avoid omission and double counting with other elements of the policy liabilities and with liabilities other than policy liabilities. For example, if the actuary has valued the policy liabilities for riders and supplementary benefits in participating policies as though they were non-participating—i.e., with provision for adverse deviation in excess of that appropriate for participating insurance – then the assumed cash flow from policyholder dividends would exclude the portion of that excess which is included in the dividend scale.

.35 The selected policyholder dividend scales in a particular scenario would be consistent with the other elements of that scenario, but would take account of how insurer inertia, policyholder reasonable expectations, and market pressure may preclude the dividend scale from being responsive to changes assumed in the scenario. Those scales would also be consistent with the insurer's dividend policy except in a scenario which that policy does not contemplate and which would provoke a change in it.

.36 If the current dividend scale anticipates a future deterioration in experience, then the actuary would assume continuance of that scale in response to that deterioration. If the current dividend scale does not respond to a recent deterioration in experience but the insurer's policy is to do so, and if the delay in doing so does not provoke a contrary policyholder reasonable expectation, then the actuary would assume such response.

.37 An assumption of cash dividends to all policyholders is appropriate only if the alternative options to cash have equivalent value, failing which the actuary would

either adjust the cash dividends to reflect the non-equivalence or make explicit assumption about policyholder exercise of the various dividend options, and

provide for the anti-selection which will result from increasing exercise of the more valuable options.

Forecast of cash flow

.38 In calculating policy liabilities, the actuary would allocate assets to the liabilities at the balance sheet date, forecast their cash flow after that date, and, by trial and error, adjust the allocated assets so that they reduce to zero at the last cash flow.

.39 Use of the work of another person may be appropriate for forecasting the cash flow of certain assets, such as real estate. 1610

Income tax and alternative tax

~~.41~~.40 This item deals with cash flow from tax based on income (herein called "income tax") and other taxes not based on income but which interact with income tax; for example, certain capital taxes in Canada (herein called "alternative tax").

.41 The cash flow from such taxes would be limited to that in respect of the relevant policies and the assets which support their policy liabilities, and thus, with the exception of the recoverability of future tax losses described below would ignore any interaction between that cash flow and cash flow in the rest of the insurer; e.g., it would ignore tax on investment income from assets which support the insurer's~~capital.~~ capital. For a particular scenario, forecasted income before tax is equal to zero in each accounting period after the balance sheet date. That is so because that scenario assumes occurrence of the adverse deviations for which it makes provision. If income according to tax rules were equal to income in accordance with generally accepted accounting principles, and if there were no alternative tax, then the corresponding forecasted tax cash flow would also be equal to zero. In reality, however, such tax cash flow may differ from zero because of 2320.38

differences—both temporary and permanent—between income in accordance with generally accepted accounting principles and in income in accordance with tax rules,

the operation of carry-forward and carry-back in the tax rules, and

alternative tax and the interaction between it and income tax.

.42 An example of a temporary difference is a difference between policy liabilities and the corresponding tax liabilities.

.43 An example of a permanent difference is a preferential tax rate on the investment income on a class of assets.

.44 The forecast of cash flow from such taxes would therefore take account of positive or negative tax as a result of permanent and temporary differences at, and arising after, the balance sheet date, and of alternative taxes incurred after the balance sheet date.

.45 The resulting policy liabilities make appropriate provision for cash flow on account of such taxes. If the insurer's balance sheet records a future tax asset or liability in respect of such taxes, then, in order to avoid double counting, the actuary would adjust the policy liabilities otherwise calculated upward to reflect the existence of the future tax asset and downward to reflect the existence of future tax liability.

.46 The realization of negative tax depends on the simultaneous availability of income which is otherwise taxable. In forecasting such income, the actuary would 2320.41

make provision for adverse deviations,

take into account the projected tax position of the company overall, but

not take account of the expected release of provisions for adverse deviations in the policy liabilities because, as noted above, their calculation implicitly assumes that those adverse deviations occur (as noted above).

Adverse deviation borne by policyholders

.47 The policy liabilities need not make provision for adverse deviation to the extent that the insurer can offset its effect by adjustments to policyholder dividends, premium rates, and benefits. The insurer's contractual right of such offset may be constrained by policyholder reasonable expectations, competition, regulation, administrative delays, and the fear of adverse publicity or anti-selection. 1740.12 1740.24

Adoption of a scenario

.48 If the selection of scenarios is deterministic, then the actuary would adopt a scenario whose policy liabilities are within the upper part of the range of the policy liabilities for the selected scenarios, provided, however, that the policy liabilities would not be less than those in the prescribed scenario with the largest policy liabilities.

.49 If the selection of scenarios is stochastic, then the actuary would adopt a scenario whose policy liabilities are within the range defined by

the average of the policy liabilities which are above the 60th percentile of the range of policy liabilities for the selected scenarios, and

the corresponding average for the 80th percentile[6].

Scenario-tested assumptions

1740.21

.50 The provision for adverse deviations in respect of scenario-tested assumptions results from calculating the policy liabilities for multiple scenarios and adopting a scenario whose policy liabilities are relatively high.

Other assumptions

.51 The provision for adverse deviations in respect of each assumption other than the scenario-tested assumptions results from a margin for adverse deviations included in that assumption.

.52 The assumptions unique to a particular scenario are the scenario-tested assumptions and each other assumption which is correlated with them. For example, policyholder dividends and the exercise of options by borrowers and issuers are strongly correlated with interest rates. Lapses may be correlated or not, depending on the circumstances. The assumption on a matter not so correlated would be common to all scenarios. 1740.39

[6] That may alternatively be written as "the range defined by the 60th and 80th conditional tail expectations," using the terminology defined in the *Report of the CIA Task Force on Segregated Funds*, page 38.

~~4.1~~2330 SCENARIO ASSUMPTIONS: INTEREST RATES

Interest rate scenario

.01 An interest rate scenario comprises, for each forecast period between the balance sheet date and the last cash flow,

an investment strategy,

an interest rate for each default-free asset and the corresponding premium for each asset subject to default, and

an inflation rate consistent with those interest rates.

.02 The scenario would be consistent among the insurer's lines of business.

.03 The investment strategy defines reinvestment and disinvestment practice for each type, default risk classification, and term of the invested assets which support policy liabilities. Assumption of the insurer's current investment strategy implies investment decisions of reinvestment and disinvestment in accordance with that strategy and hence the risk inherent in that strategy.

.04 The investment strategy for each scenario would be consistent with the insurer's current investment policy. The policy liabilities would therefore make no provision for any increased risk which may result from a change in that policy.

.05 The number of assumed terms of assets would be large enough to permit assumption of changes in the shape and steepness of the yield curve. That implies a minimum of a short, a medium, and a long term. ~~The plausible[7] assumed changes in the Canadian interest rates for each of those terms are an increase or decrease of~~

~~1% during a quarter year,~~

~~2% during a year,~~

~~4% during five years, and~~

~~5% during ten years.~~

~~[7] The CSOP uses "plausible" in its dictionary meaning of "having a show of truth, reasonableness, or worth; apparently acceptable; fair-seeming" (OED). In the above context, the plausible range is the range which the actuary should take into account in valuing policy liabilities. Some actuaries have suggested "conceivable" as the appropriate word in that context. It seems to the Committee that "conceivable" is too onerous. Its dictionary meaning is "that which can be imagined or thought of" (OED). "Plausible" is therefore a sub set of "conceivable". One could write that "a 30% default free interest rate is conceivable in Canada – for the default free rate has been higher than that elsewhere recently – but is not plausible."~~

.06 The plausible range of Canadian default-free interest rates is

from 3% to 10% for short term rates and

5% to 12% for ~~long term~~long-term rates

but, if 125% of the actual rate at the balance sheet date exceeds the high end rate of the plausible range above for the equivalent term, then the range would be extended upward to 125% of the actual rate for assumption of rates for forecast periods immediately following the balance sheet date. If 50% of the actual rate at the balance sheet date is less than the low end rate of the plausible range above for the equivalent term, then the range would similarly be extended downward to 50% of the actual rate for assumption of rates for forecast periods immediately following the balance sheet date. Any range extensions so determined would also be applied to the prescribed scenarios. ~~an actual rate at the balance sheet date is near the top of its range, then the range would be extended upward to 125% of the top for assumption of rates for forecast periods immediately following the balance sheet date~~. ~~If an actual rate at the balance sheet date is near the bottom of its range, then the range would be similarly extended downward to 50% of the bottom.~~

.07 A scenario for a foreign country's interest rates would be formulated independently of that for Canadian interest rates unless their positive historical correlation is expected to continue.

.08 The scenarios would include those in which the premiums for default risk range from 50% to 200% of the actual premiums at the balance sheet date.

.09 The importance of the assumptions for a particular forecast period depends on the magnitude of the net forecasted cash flow for that period.

Prescribed scenarios

.10 Because future investment return and inflation rates are so conjectural, it is desirable that the calculation of policy liabilities for all insurers take account of certain common assumptions. There are therefore seven prescribed scenarios which follow.

.11 The prescribed scenarios apply to debt investments acquired after the balance sheet date.

.12 For a prescribed scenario, if the net cash flow forecasted for a period is positive, then the actuary would

assume its application to repay the outstanding balance, if any, of borrowing in accordance with 2330.14~~3~~, and then

assume the reinvestment of any remainder in debt investments,

except that, in lieu of debt investments, the actuary may assume reinvestment in non-debt investments

not to exceed their proportion of investments at the balance sheet date if the insurer controls investment decisions and if such reinvestment is consistent with its investment policy, or

in the proportion expected to be selected by policyholders if policyholders control investment decisions.

~~That restriction does not apply to normal trading within a non-debt investment class.~~

~~.13For a prescribed scenario, if the net cash flow forecasted for a period is negative, then the actuary would assume an offsetting disinvestment or borrowing, or a mix of the two. If the insurer controls investment decisions, then~~

~~a disinvestment would be of debt securities or, if needed to avoid breach of investment policy, a mix of debt and non-debt securities, and~~

~~a borrowing would be in accordance with investment policy, would be short term, and would be soon repayable by subsequent positive forecasted cash flow.~~

~~If policyholders control investment decisions, then the disinvestment and borrowing would be that which they are expected to select.~~

.13 The limitation~~s outlined above in 2330.12 and 2330.13~~ on reinvestment in non-debt instruments is ~~are~~ intended to apply in situations where reflecting ~~an~~ increased utilization of these instruments would reduce the policy liabilities.

.14 For a prescribed scenario, if the net cash flow for a period is negative, then the actuary would assume an offsetting disinvestment or borrowing, or a mix of the two. For insurer controlled investment decisions, any borrowing would be in accordance with the investment policy, would be short term, and would be expected to be soon repayable by subsequent positive forecasted cash flow.

.15 The prescribed scenarios provide guidance on interest rates for sale and purchase of investments and on the type and term of investments purchased, but provide no guidance on the type and term of investment sold.

~~.14~~.16 The parameters in the prescribed scenarios apply to investments denominated in Canadian dollars. For each prescribed scenario, the actuary would determine the corresponding parameters for investments denominated in a foreign currency from the historical relationship between investments denominated in that currency and investments denominated in the Canadian dollar if the expected continuance of that relationship so permits. Otherwise the actuary would devise independent scenarios for investments denominated in that currency.

.17 For each prescribed scenario, the insurer's reinvestment strategy for debt instruments by type and term

at the balance sheet date is the distribution which the insurer is then purchasing,

at and after the 20th anniversary of the balance sheet date is default-free coupon bonds with a term of 15 years or less, and

between those two dates is according to a uniform transition from the balance sheet date distribution to default-free coupon bonds with a term of 15 years or less.

Prescribed scenario 1

.18 The interest rates for investments purchased

at the balance sheet date are those for the distribution of investments which the insurer is then making,

at and after the 20th anniversary of the balance sheet date are uniformly 5%, and

between those two dates is according to a uniform transition from the balance sheet date rates to 5%.

Prescribed scenario 2

.19 Same as prescribed scenario 1, with 12% substituted for the 5% interest rate at the 20th anniversary of the balance sheet date.

Prescribed scenario 3

.20 The long term default-free interest rate moves cyclically in 1% steps between 5% to 12%. The first cycle is irregular: at the first anniversary of the balance sheet date, the rate is

the next downward step toward 5% in a regular cycle if the actual rate at the balance sheet date is greater than 5%, after which the cycle continues regularly, and

the next integral higher percentage if that actual rate is equal to or less than 5%, with the rate at subsequent anniversaries increasing in 1% steps to 5%, at which point the cycle continues regularly.

~~.19~~.21 The ~~short term~~short-term default-free interest rate changes uniformly over a period, usually not more than three years, from that at the balance sheet date to 60% of the corresponding ~~long term~~long-term interest rate, and thereafter remains at 60% of the corresponding ~~long term~~long-term interest rate.

~~.20~~.22 Other interest rates are consistent with those long and ~~short term~~short-term default-free interest rates.

Prescribed scenario 4

.23 Same as prescribed scenario 3, except that the first irregular cycle reaches 12% rather than 5%.

Prescribed scenario 5

~~.22~~.24 Same as prescribed scenario 3, except that the ~~short term~~short-term interest rate at an anniversary of the balance sheet date is a percentage of the corresponding ~~long term~~long-term interest rate. That percentage moves cyclically in 20% annual steps from 40% to 120% and back. The first cycle is irregular; at the first anniversary, the percentage is

the next step above the actual percentage at the balance sheet date if that actual percentage is less than 120%, and

120% otherwise,

after which the cycle continues regularly.

Prescribed scenario 6

~~.23~~.25 As respects ~~long term~~long-term interest rate, same as prescribed scenario 4.

~~.24~~.26 As respects ~~short term~~short-term interest rate, same as prescribed scenario 5, except that, at the first anniversary of the balance sheet date, the percentage is

the next step below the actual percentage at the balance sheet date if that actual percentage is more than 40%, and

40% otherwise.

Prescribed scenario 7

.27 Default-free interest rates after the balance sheet date are the forward interest rates implied by ~~the~~ an equilibrium market yield curve at that date.

Other scenarios

.28 In addition to the prescribed scenarios, which are common to the calculation of policy liabilities for all insurers, the actuary would also select other scenarios which are appropriate to the circumstances of the case.

~~.27~~.29 ~~The~~For interest rate scenarios, the number of other scenarios would be relatively large to the extent that~~:~~

the pattern of forecasted net cash flow in the base scenario is such that the classification of scenarios between favourable and unfavourable is unclear.

forecasted net cash flow is sensitive to the selection of interest rate scenarios.

the range of present values of forecasted net cash flow is wide, suggesting exposure to mismatch risk.

investment policy does not control mismatch risk.

asset-liability management is loose.

flexibility to manage assets or liabilities is limited

~~4.1~~2340 OTHER ASSUMPTIONS: ECONOMIC

Fixed income assets: investment return

.01 The forecast of cash flow from a fixed income asset would be the promised cash flow over the term of the asset, modified for asset depreciation and borrower and issuer options. 2340.02 2340.08

Fixed income assets: asset depreciation

.02 The actuary's best estimate of asset depreciation would depend on

asset type, credit rating, liquidity, term, and duration since issue,

subordination to other debt of borrower or issuer,

the insurer's credit underwriting standards, diversification within a particular type of investments,

to the extent that it is indicative of the future, the insurer's own experience,

the insurance industry's experience,

guarantees which offset depreciation, such as that in an NHA mortgage, and

potential for anti-selection by borrowers and issuers.

.03 Asset depreciation comprises that of both assets impaired at the balance sheet date and assets which become impaired after the balance sheet date, and includes loss of interest, loss of principal, and expense of managing default.

.04 Asset depreciation is likely to be relatively high after the forced renewal of a mortgage loan; i.e., one where the mortgagor ~~is unable to pay~~can neither pay, nor find an alternative mortgagee for the balance outstanding at the end of its term but is able to continue its amortization. The explicit forecasting of subsequent cash flow is usually so conjectural that, to commute the cost of that asset depreciation to the end of the term of the mortgage is an acceptable approximation unless it undermines the interest rate assumption in the scenario.

.05 The actuary would not necessarily assume that the best estimate of asset depreciation is less than the premium of an asset's investment return over the corresponding default-free interest rate.

.06 The low and high margins for adverse deviations for a scenario are respectively 25% and 100% of the best estimate for that scenario, except that

a higher range is appropriate where those percentages of an unusually low best estimate are not meaningful and

zero is usually appropriate for a government's debt denominated in its own currency.

.07 Selection of a higher margin for adverse deviations for a type of assets is appropriate to the extent that

the insurer's credit underwriting is weak or poorly controlled,

the insurer's management lacks experience,

the insurer's asset depreciation experience differs from that of the insurance industry,

the assets are junior or below investment grade securities and

the assets have ~~which has~~ been growing more rapidly in the insurer than in the insurance industry.

Fixed income assets: exercise of borrower and issuer options

.08 Examples of borrower and issuer options are the option to prepay a mortgage loan, to extend the term of a loan, and to call a bond.

.09 The assumed exercise may depend on the interest rates in the scenario. Anti-selection by commercial borrowers and issuers would usually be intense.

.10 Forecasted cash flow would include any penalty generated by exercise of an option.

Non-fixed income assets: investment return

.11 The actuary's best estimate of investment return on a non-fixed income asset would not be more favourable than a benchmark based on historical performance of assets of its class and characteristics.

.12 The low and high margins for adverse deviations in the assumptions of common share dividends and real estate rental income are respectively 5% and 20%.

.13 The margin for adverse deviations in the assumption of common share and real estate capital gains is 20% of the best estimate plus an assumption that those assets change in value at the time when the change is most adverse. That time would be determined by testing, but usually is the time when their book value is largest. The assumed change as a percentage of market value

of a diversified portfolio of North American common shares is 30%, and

of any other portfolio is in the range of 25% to 40% depending on the relative volatility of the two portfolios.

.14 Whether the assumed change is a gain or loss depends on its effect on benefits to policyholders. A capital loss may reduce policy liabilities as a result of that effect.

Taxation

.15 The best estimate would be for continuation of the tax regime at the balance sheet date, except that the best estimate should anticipate a definitive or virtually definitive decision to change that regime. The margin for adverse deviations would be zero. 1520.06

Foreign exchange

.16 The needed assumptions would include foreign exchange rates when policy liabilities and their supported assets are denominated in different currencies.

.17 The best estimate would be for continuance of the foreign exchange rates at the balance sheet date, except that the best estimate should anticipate any imminent unfavourable devaluation. There would be a provision for adverse deviation in respect of a currency mismatch.

~~4.1~~2350 OTHER ASSUMPTIONS: NON-ECONOMIC

Margin for adverse deviations

.01 The actuary would select a margin for adverse deviations between a low margin and a high margin 1740.39

specified for each best estimate assumption discussed below and

of 5% and 20% (or –5% and –20%) respectively of each other best estimate assumption.

.02 Provided, however, that, if a margin for adverse deviations cannot be defined as a percentage of the best estimate assumption, then the related provision for adverse deviations would be taken as the increase in policy liabilities which results from substitution of a conservative assumption for the best estimate assumption.

.03 The high margin is appropriate for a best estimate assumption based on industry experience, as opposed to insurer-specific experience.

.04 A selection above the high margin is appropriate, however, for unusually high uncertainty or if the resulting provision for adverse deviations is unreasonably low because the margin is expressed as a percentage and the best estimate is unusually low.

Insurance mortality

.05 The actuary's best estimate of insurance mortality would depend on

the life insured's age, sex, smoking habit, health, and lifestyle,

duration since issue of the policy,

plan of insurance and its benefits provided,

the insurer's underwriting practice (that of its reinsurer for facultative reinsurance), including, if applicable to the policy, the absence of underwriting or less stringent underwriting for a group of simultaneously sold policies,

the size of the policy, and

the insurer's distribution system and other marketing practice,

and would include the effect of any anti-selection. 1730.18

.06 If the actuary's best estimate assumption includes a secular trend toward lower mortality rates whose effect is to reduce the policy liabilities, then it is prescribed that the actuary negate that trend by an offsetting increase or decrease in what the actuary would otherwise select as a margin for adverse deviations.[8] 1720

.07 The low and high margins for adverse deviations for the mortality rate per 1,000 are respectively an addition of 3.75 and 15, each divided by the best estimate curtate expectation of life at the life insured's age at the balance sheet date.

.08 Selection of a higher margin for adverse deviations is appropriate if there have been unfavourable medical developments or if the insurer 2350.01

has recently changed underwriting practice,

has a policy of internal replacement conducive to the rotation of older policies, or

is prone to anti-selection by its field force.

Annuity mortality

.09 The actuary's best estimate assumption of annuity mortality would depend on

the annuitant's age, sex, smoking habit, health, and lifestyle,

size of premium,

plan of annuity and its benefits provided, and

whether registered or not, whether structured settlement, and whether group or individual contract,

and would include the effect of any anti-selection resulting from the annuitant's option to select the timing, form, or amount of annuity payment, or to commute annuity payments. 1730.18

[8] The current standard prescribes that the best estimate assumption includes no secular trend toward lower mortality rates and recommends a "normal" MFAD. The proposed standard permits that secular trend in the best estimate, but negates it through a higher-than-normal MFAD. The proposed standard therefore does not affect the result of a valuation of policy liabilities. Many actuaries assume continuation of the historical trend to lower mortality rates in selecting a best estimate of mortality for pricing and DCAT. The proposed standard permits them to use the same best estimate for valuation of policy liabilities, for pricing, and for DCAT, while at the same time preserving the traditional prudent approach to the valuation of policy liabilities.

.10 The insurance underwriting in a "back-to-back" insurance/annuity package may unfavourably affect the best estimate.

.11 It is prescribed that the actuary's best estimate includes a secular trend toward lower mortality rates as promulgated from time to time.

.12 The low and high margins for adverse deviations are respectively a subtraction of 5% and 15% of the best estimate.

.13 Selection of a higher margin for adverse deviations is appropriate if the insurer's 2350.01

policy file does not classify annuitants by sex, or

annuity payment control is inadequate.

Morbidity

.14 The actuary's best estimate of insurance morbidity would depend on

the life insured's age, sex, smoking habit, occupation, industry, health, and lifestyle,

duration since issue of the policy,

in the case of income replacement insurance, definition of disability, unemployment levels, and, in the case of an outstanding claim, cause of disability,

plan of insurance and its benefits provided, including elimination period, guarantees, deductibles, coinsurance, return-of-premium benefits, and benefit limits, indexation, and offsets,

the insurer's underwriting practice (that of its reinsurer for facultative reinsurance), including, if applicable to the policy, the absence of underwriting or less stringent underwriting for a group of simultaneously sold policies,

the insurer's administration and claim adjudication practice,

the size of the policy,

seasonal variations,

in the case of group insurance, participation level,

environmental factors, such as a change in the offset to government benefits,

and would include the effect of any anti-selection. 1730.18

.15 If the actuary selects a higher-than-usual best estimate of disability incidence because of an outlook for a high level of unemployment, he or she would not necessarily select a concomitant higher-than-usual best estimate of disability termination.

.16 It is prescribed that the actuary's best estimate disability termination rates after 10 years of disability for North America not be higher than those promulgated from time to time.

.17 The low and high margins for adverse deviations are respectively an addition of 5% and 20% of the best estimate of disability incidence rates, and a subtraction of 5% to 20% of the best estimate disability termination rates. The actuary's selection would reflect any expected correlation between incidence and termination rates.

.18 Selection of a higher margin for adverse deviations is appropriate to the extent that the insurer's 2350.01

experience studies of disability insurance claim costs do not separate incidence and termination rates,

experience is unstable, difficult to estimate, or inadequately monitored,

exposure is concentrated by industry, occupation, or geography,

underwriting and claims staff's expertise is in other lines of business,

underwriting and claims adjudication practice, including rehabilitation, are not well managed, and

field force is prone to place better risks elsewhere.

Withdrawal and partial withdrawal

.19 The actuary's best estimate of withdrawal rates would depend on

policy plan and options,

the life insured's attained age,

duration since issue of the policy,

method of payment and frequency of premiums,

premium paying status,

policy size,

the policy's competitiveness, surrender charges, persistency bonuses, taxation upon withdrawal, and other incentives and disincentives to withdrawal,

policyholder and sales representative sophistication,

the insurer's distribution system and its commission, conversion, replacement, and other marketing practices, and

the interest rate scenario,

and would include the effect of any anti-selection. 1730.18

.20 The insurer's withdrawal experience is pertinent and usually credible. It is not available for new products and for higher durations on recent products, which is a problem for the actuary if their policy liabilities are sensitive to withdrawal rates.

.21 The automatic payment of insurance premiums by the annuity benefit in a "back-to-back" insurance/annuity package is a disincentive to withdrawal.

.22 Reinsurance assumed withdrawal rates depend on practice in the direct insurer.

.23 A "cliff" is a sudden significant increase in the benefit available at withdrawal. That increase may result from increase in cash value, decrease in surrender charge, or availability of a maturity benefit or persistency bonus. Unless there is pertinent persistency experience data to the contrary, the actuary's best estimate withdrawal rates would grade to zero as the cliff approaches and remains at zero for an interval before the cliff is reached. The same applies to a return of premium benefit in life insurance and to one in accident and sickness insurance, with modification in the latter case if the benefit is contingent upon zero claims or reduced by the amount of claims.

~~.25~~.24 The actuary's best estimate withdrawal rate would be zero for a paid-up policy without non-forfeiture benefit.

.25 The low and high margins for adverse deviations are respectively an addition or subtraction, as appropriate, of 5% and 20% of the best estimate withdrawal rates. ~~The~~In order to ensure that the margin for adverse deviations increases policy liabilities, the choice between addition and subtraction may need to vary by prescribed ~~vary by policy duration and among interest rate scenarios.~~ scenario, age, policy duration, and other parameters. In the case of partial withdrawal, two assumptions are needed – the amount withdrawn and the partial withdrawal rate. 2350.01 1740.47

.26 Selection of a higher margin for adverse deviations is appropriate

in the case of deposits and deferred annuities without market value adjustments at withdrawal,

if the economic outlook is unstable, and

if the insurer's marketing practice provokes anti-selection.

Anti-selective lapse

.27 Strictly speaking, "lapse" means termination of a policy with forfeiture, but in the context of anti-selection has come to include any termination or the election of the extended term insurance non-forfeiture option. "Anti-selective lapse" is a tendency of healthy policyholders to lapse or unhealthy policyholders not to lapse, with a concomitant deterioration in the insurer's mortality or morbidity experience. To determine whether the tendency has operated in a particular case requires either a re-underwriting of those who have lapsed and those who have not, or a study of the mortality among those who lapsed, neither of which is likely to be practical. Policyholders will, however, make decisions in their own perceived interest, so that anti-selective lapse is plausible whenever that perceived interest is for unhealthy policyholders not to lapse or for healthy policyholders to lapse.

.28 It is difficult to estimate with confidence the intensity of anti-selective lapse. It is plausible that the intensity will be proportional to the intensity of policyholder perceived interest. ~~But~~However anti-selective lapse is merely a **tendency** provoked by the policyholder's **perceived** interest. The policyholder may not know the true state of his or her health. The policyholder may imprudently favour or be obliged by financial pressure to adopt a ~~short term~~short-term interest with ~~long-term~~long-term detriment; thus, an unhealthy policyholder may lapse when the premium increases, perceiving the policy as no longer affordable. Through ignorance or inertia, a healthy policyholder may continue a policy which could be replaced by a superior one. Moreover, anti-selective lapse is not the unvarying effect of a decision in the policyholder's perceived interest: an unhealthy policyholder may lapse a policy no longer needed for which the healthy policyholder perceives continuing need. ~~The perceived interest will tend to be a real interest if the policyholder is sophisticated or well-advised, but may be influenced by the real interest of the intermediary, which in turn is influenced by the insurer's compensation practice~~. Without pertinent and reliable experience, however, the actuary would not assume that the non-~~non-~~lapsation of healthy policyholders favourably affects the best estimate for the persisting policyholders.

.29 The premise to the actuary's assumptions would be that policyholder decisions

will tend to serve their perceived interest, and

not serve the insurer's interest unless the two run together.

.30 Here are examples where the perceived interest of the healthy policyholder may be ~~is~~ to lapse: 1730.18

a premium increase at renewal of term insurance,

an unfavourable underwriting decision at renewal of re-entry term insurance,

a benefit decrease or premium increase of adjustable insurance,

a premium needed to avoid termination of universal life insurance with exhausted funding,

a reduction in policyholder dividend scale,

an offer or availability of a superior replacement policy, such as by the creation of a preferred underwriting class,

a significant but temporary increase (spike) in non-forfeiture value, and

a downgrade in the insurer's credit rating.

Expense

.31 The actuary would select a best estimate assumption which provides for the expense of the relevant policies and their supporting assets, including overhead. The insurer's other expense is irrelevant to the valuation of policy liabilities. Other expense includes

expense related to policies which, for the relevant policies, was incurred before the balance sheet date, such as marketing and other acquisition expense, and

expense not related to the relevant policies and their supporting assets, such as investment expense for the assets which support capital.

.32 The assumption would provide for future expense inflation consistent with that in the interest rate scenario. 2330.01

.33 A stable insurer's expense experience is pertinent if its expense allocation is appropriate for valuation of policy liabilities (or if the actuary can correct the inappropriateness, e.g., by reallocating corporate expense to operating lines of business).

.34 A particular insurer may have an expectation of reduced expense rates, but the actuary would anticipate only a reduction which is forecasted with confidence.

.35 Investment expense comprises

administration expense, both internal and external,

expense related to investment income, such as deferred fees and commissions and direct taxes, and

interest on money borrowed to finance investment.

.36 The insurer incurs neither cash rental expense nor cash rental income on real estate which it owns and occupies. The actuary would deem such expense and, if the real estate supports the policy liabilities, such income at a reasonable rate in the selection of an assumption of expense and investment return.

.37 Certain taxes are akin to expenses. The actuary would make similar provision for them in the policy liabilities to the extent that they relate to the relevant policies and their supporting assets. They include both premium taxes, which are straightforward, and taxes whose basis is neither income nor net income but which may be complicated by a relationship with income tax; for example, those currently incurred may be offset against later income tax. 2320.40

.38 The low and high margins for adverse deviations are respectively 2.5% and 10% of best estimate expense including inflation thereof. No margin for adverse deviations is needed for a tax, such as premium tax, whose history has been stable.

.39 Selection of a higher margin for adverse deviations is appropriate to the extent that the insurer's

expense allocation is inappropriate for the valuation of policy liabilities and the actuary is unable appropriately to adjust it for the valuation,

relevant policies or the size of their supporting assets is unstable,

distribution systems have different expense and growth rates, and

expenses are volatile or not ~~well-controlled.~~well controlled.

Policyholder options

.40 Examples of policyholder options are an option to purchase additional insurance, to convert term to permanent insurance, to select the extended term insurance non-forfeiture option, to make partial withdrawal from a universal life insurance policy, and to select the amount of premium for a flexible premium policy.

.41 The actuary would select a best estimate assumption of policyholder exercise of both contractual options and extra-contractual options of which they have reasonable expectation.

.42 The actuary's best estimate would depend on

the life insured's attained age,

duration since issue of the policy,

plan of insurance and its benefits provided,

historical premium payment patterns,

method of premium payment,

sophistication of the policyholder and the intermediary,

perceived self-interest of the policyholder and the intermediary,

the policy's competitiveness, and

the insurer's distribution system and other marketing practice,

and would make provision for anti-selection.

.43 The actuary would make provision for adverse deviations by testing the effect on policy liabilities of plausible alternative assumptions of policyholder exercise of options and adopting one with relatively high policy liabilities.

2400 THE APPOINTED ACTUARY

~~4.1~~2410 DEFINITIONS

.01 In this section and in section 2500, "senior management" means~~,~~

in the case of a Canadian insurer, both the chief executive officer and the chief financial officer, and,

in the case of a foreign insurer, both the chief agent for Canada and the person designated by the insurer as having responsibility for its Canadian operation.

.02 In this section, "directors" means an insurer's board of directors and, in the case of a foreign insurer, includes the person whom they designate as responsible for the insurer's Canadian branch.

~~4.1~~2420 SCOPE

.01 The standards in this section apply to an appointed actuary who, pursuant to

the federal *Insurance Companies Act*, is the actuary of a company or society,

the federal *Insurance Companies Act*, is the actuary of the Canadian branch of a foreign company, or

a provincial Act, has the access to information, ~~immunity,~~protection against civil liability, and duties in an insurer which are substantially the same as those of the appointed actuary in the federal *Act*.[9]

~~4.1~~2430 EXTENSION OF SCOPE

.01 The standards in this section do not apply to an actuary who is not an appointed actuary unless that actuary has the access to information and ~~immunity~~protection against civil liability equivalent to that which the federal *Insurance Companies Act* grants to an appointed actuary.[10]

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[9] So detailed a reference to legislation is unusual in the standards. The reason here is that the cited legislation provides the appointed actuary with a right of access to information and ~~immunity.~~protection. The Committee believes that the sometimes high-risk work which this section recommends—in particular the so-called "whistle blowing" work—needs the legislated ~~immunity.~~protection.

[10] This differs from the present standards, which apply the appointed actuary responsibilities to any actuary who values the policy liabilities of an insurer under the "old" legislation.

~~4.1~~2440 ACCEPTING AND CONTINUING AN ENGAGEMENT

.01 *Section 1400 applies rigorously to the engagement.* [effective date to be determined] 1410

Qualifications, experience, and knowledge

.02 As respects rule 3, the necessary qualifications, experience, and knowledge go beyond technical understanding and include the awareness which comes with maturity, communications with other actuaries, discussions at Institute meetings, and familiarity with conditions both internal and external to the insurer, and include communications skills.

.03 An actuary accepting an engagement for the first time may wish to arrange professional, formal, and timely access to another actuary with experience as an appointed actuary.

.04 It is important that the insurer's ~~board of~~ directors understand and accept the actuary's role and its requirements for time, resources, and access to information. The actuary may wish written confirmation of the understanding and acceptance unless the role is part of the insurer's corporate culture.

Information needed

.05 The information necessary for the work consists of the records, accounts, documents, and oral briefings which provide an understanding of the insurer's operations, its obligations and the resources available to meet those obligations. That information includes

files of inforce policies and outstanding claims, including their reinsurance,

policy provisions,

past experience data,

past financial data,

communications with auditors and regulators,

pricing practice,

underwriting practice,

claims settlement practice (including case estimate practice) and cost,

asset-liability management practice, and

capital management practice.

.06 The process to identify and assure timely receipt of that information includes

an understanding of the insurer's decision making,

continual communication with members of management who can supply information, and

continual communication with the auditor in accordance with the CIA/CICA *Joint Policy Statement*. 1630

~~4.1~~2450 REPORT ON MATTERS REQUIRING RECTIFICATION

.01 *The actuary should identify and monitor matters which may threaten the insurer's financial condition. The actuary should investigate and then report any such matter which requires rectification to the senior management and, in the case of a Canadian insurer, send a copy of the report to the directors. The report may include recommendations for rectification and should specify a deadline for rectification which the actuary may later extend if appropriate. If there is no suitable rectification by that deadline or its extension, then the actuary should report the matter to the insurer's regulator.* [effective date to be determined]

.02 The sensitivity of financial condition to adverse conditions and events varies among insurers. For example, an increase in withdrawal rates among policies may be devastating in one life insurer and may be beneficial in another. Financial condition, and hence the magnitude of the conditions and events which may threaten it, also varies among insurers.

.03 The frequency and intensity of the monitoring depend on the threatening conditions and events and on the circumstances of the insurer. A quarterly review would usually be a minimum.

.04 There would be no such report to senior management of an adverse condition which does not threaten the insurer's financial condition. Informal notification and consultation would usually precede, and may obviate, that report to senior management. ~~Informal notification and consultation would usually precede, and may obviate, that report to senior management~~.

.05 That report would describe the threatening condition or event and the methods and assumptions in the actuary's investigation of it. It is desirable that the report includes recommendations for its rectification.

.06 The deadline would allow time which is reasonable in the circumstances to arrange rectification.

~~.08~~.07 The report to the regulator would describe the actuary's investigation, the report to senior management, and ~~the~~senior management's response to that report. The actuary would advise the directors of the report to the regulator.

~~4.1~~2460 REPORT TO THE DIRECTORS

.01 *The actuary for a Canadian insurer should investigate and report at least yearly to the directors or to their audit committee if they so delegate*

on the insurer's financial position and financial condition and,

if the insurer has a participating account, on the allocation of income among accounts and on the dividend policy and dividend scales for the participating policyholders.

.02 *The actuary for a foreign insurer should report at least yearly to its ~~senior management~~ Chief Agent for Canada on its financial position and financial condition.* [effective date to be determined]

Allocation of income

.03 The report on allocation of income among accounts would consider its fairness and equity to participating policyholders.[11]

Dividend policy and dividend scale

.04 The report on dividend policy and dividend scale would consider conformity of the dividend scale to the dividend policy.

~~4.1~~2470 COMMUNICATION WITH THE AUDITOR

.01 Communication with the insurer's auditor is desirable when the actuary makes a report to the insurer's senior management on a matter requiring rectification or makes an unfavourable report on the insurer's financial condition.

[11] This standard (and the standard in the following item on dividend policy and dividend scale) are minimal. It seems likely that new standards will eventually emerge from the current educational notes on those subjects.

2500 DYNAMIC CAPITAL ADEQUACY TESTING

~~4.1~~2510 SCOPE

.01 This section applies to the appointed actuary of an insurer when preparing a report on the insurer's financial condition pursuant to law.

~~4.1~~2520 INVESTIGATION

.01 *The actuary should make an annual investigation of the insurer's recent and current financial position, and financial condition, as revealed by dynamic capital adequacy testing for various scenarios.*

.02 *The actuary should make a report of each investigation in writing to the insurer's Board of Directors (or to their audit committee if they so delegate) or Chief Agent for Canada. The report should identify possible actions for dealing with any threats to satisfactory financial condition which the investigation reveals.*

.03 *The actuary should also make an interim investigation if there is a material adverse change in the insurer's circumstances.* [effective 1/1/99]

~~4.1~~2530 METHOD

Recent and current financial position

.01 The investigation would review operations of recent years (normally at least three years) and the financial position at the end of each of those years.

Dynamic capital adequacy testing

.02 Dynamic capital adequacy testing examines the effect of various plausible adverse scenarios on the insurer's forecasted capital adequacy. It is the actuary's primary tool for investigation of an insurer's financial condition.

.03 The purpose of dynamic capital adequacy testing is to identify plausible threats to satisfactory financial condition, actions which lessen the likelihood of those threats, and actions which would mitigate a threat if it materialized.

.04 Dynamic capital adequacy testing is defensive: it addresses threats to financial condition rather than the exploitation of opportunity.

Satisfactory financial condition

.05 The insurer's financial condition is satisfactory if throughout the forecast period it is able to meet all its future obligations under the base scenario and all plausible adverse scenarios, and under the base scenario it meets the minimum regulatory capital requirement.

.06 The minimum regulatory capital requirement is the requirement imposed by the regulator requiring the actuary's report on the insurer's financial condition. In 2001, for example, for insurers regulated under the federal *Insurance Companies Act*, the minimum regulatory capital requirement is based upon the Minimum Asset Test (MAT) for a Canadian property and casualty insurer, the Minimum Continuing Capital and Surplus Requirement (MCCSR) for a Canadian life insurer, the Test of Adequacy of Assets in Canada and Margin Requirements (TAAM) for a Canadian branch of a foreign life insurer, and the Test of Adequacy of Deposits (TAD) for a Canadian branch of a foreign property and casualty insurer. For insurers regulated under provincial legislation, the minimum regulatory capital requirement is based upon such similar provincial requirement.

Forecast period

.07 The forecast period begins at the most recent available fiscal year-end balance sheet date. The forecast period for a scenario would be long enough to capture the effect of its adversity and the ability of management to react. The forecast period for a typical life insurer would be five fiscal years. The forecast period for a typical property and casualty insurer would be two fiscal years.

Scenarios

.08 The scenarios consist of a base scenario and several plausible adverse scenarios. Each scenario takes into account not only inforce policies but also the policies assumed to be sold during the forecast period, and both insurance and non-insurance operations. (For example, the operations of an insurer's trust company subsidiary.)

Base scenario

.09 The base scenario is a realistic set of assumptions used to forecast the insurer's financial position over the forecast period. Normally, the base scenario is consistent with the insurer's business plan. It is awkward if the base scenario is not consistent with the business plan, because that implies a difference in outlook between the insurer's management and the actuary. The actuary would normally accept the business plan's assumptions for use in the base scenario unless these assumptions are so inconsistent or unrealistic that the resulting report would be misleading. The actuary would report any material inconsistency between the base scenario and the business plan.

Plausible adverse scenarios

.10 A plausible adverse scenario is a scenario of adverse, but plausible, assumptions about matters to which the insurer's financial condition is sensitive. Plausible adverse scenarios vary among insurers and may vary over time for a particular insurer.

.11 The actuary would consider plausible material risks to the insurer. Scenario testing may be required for the actuary to determine the sensitivity of the insurer's capital adequacy to each risk. It is expected that the actuary would scenario test and report annually on the base scenario, and a minimum of three plausible adverse scenarios posing the greatest risk for the insurer. Fewer than three adverse scenarios may be reported only in the rare event that it is not possible to develop three plausible adverse scenarios.

.12 For life insurers, the actuary would consider threats to capital adequacy under plausible adverse scenarios that include but are not limited to the following risk categories:

Mortality

Morbidity

Persistency

Cash flow mismatch (C-3 risk)

Deterioration of asset values (C-1 risk)

New business

Expense

Reinsurance

Government and political action

Off balance sheet

.13 For property and casualty insurers, the actuary would consider threats to capital adequacy under plausible adverse scenarios that include but are not limited to the following risk categories:

Frequency and severity

Pricing

Misestimation of policy liabilities

Inflation

Interest rate

Premium volume

Expense

Reinsurance

Deterioration of asset values (C-1 risk)

Government and political action

Off balance sheet

.14 To help the actuary determine if a risk is material and plausible, it may be useful to stress test the capital adequacy of the insurer. The actuary might determine how much a base scenario assumption needs to be changed before an adverse scenario gives rise to an unsatisfactory financial condition. The actuary can then judge whether a plausible risk or event exists for the insurer over the forecast period.

Integrated scenarios

.15 In many cases, plausible adverse scenarios are associated with a low probability of occurrence. In such cases, it is usually not necessary for the actuary to construct integrated scenarios by combining two or more low probability adverse scenarios.

.16 In some cases, however, the probability associated with a plausible adverse scenario may be close to the probability associated with the base scenario. For example, a significant asset on the balance sheet may be showing early signs of distress. In such cases, an integrated scenario would be constructed by combining each more probable adverse scenario, with a low probability adverse scenario. The low probability adverse scenario selected would be the one that has the greatest effect on the insurer's financial condition and is plausible when combined with the more probable adverse scenario.

.17 An integrated scenario would be included in the minimum of three plausible adverse scenarios required by 2530.11 if it (i.e. an integrated scenario) was found to be one of the three most adverse scenarios.

Ripple effects

.18 In assuring consistency within each scenario, the actuary would consider "ripple" effects. Although most of the other assumptions used in the base scenario may remain appropriate under the plausible adverse scenario, some may require adjustment to reflect the interdependence of assumptions in the plausible adverse scenario.

.19 Ripple effects include both regulatory action and policyholder action especially under any plausible adverse scenario where the insurer fails to meet the minimum regulatory capital requirement. In assessing potential regulatory action, the actuary would consider actions that could be taken by the Canadian regulator as well as by regulators in foreign jurisdictions. Such regulatory action and associated management response would consider the local assessment of solvency regardless of the insurer's world-wide solvency position as measured by Canadian regulatory standards.

.20 Ripple effects also include the insurer's expected response to adversity. Selection of the assumptions for that response would take into account:

the effectiveness of the insurer's management information systems,

the insurer's historical record of promptness and willingness to make difficult decisions, when faced with adversity, and

the external environment assumed in the scenario.

The actuary would report the expected response, so that users may consider its practicality and adequacy. The actuary may also report the results assuming that the insurer does not respond to the adversity.

Scope of the investigation and report

.21 The report would contain the key assumptions of the base scenario and the plausible adverse scenarios posing the greatest risk to the satisfactory financial condition of the insurer. The report would also include comments on each of the risk categories identified in this standard. The meaning of satisfactory financial condition under this standard would be disclosed in the report.

.22 The report would also contain the plausible adverse scenarios examined which cause the insurer to fall below the minimum regulatory capital requirement. Even though the actuary may have signed a satisfactory financial condition opinion, the report would make it clear that under these scenarios the regulators may impose restrictions on the operations of the insurer, including its ability to write new business.

.23 If the investigation identifies any plausible threat to satisfactory financial condition, then the actuary would attempt to identify extraordinary management action which would lessen the likelihood of that threat, or which would mitigate that threat, if it materialized. For each such plausible adverse scenario reported upon, the actuary would report the results with the insurer's expected response to adversity but before extraordinary management action, and additionally including the effect of any extraordinary management action. The actuary would report the extraordinary management action so that users may consider its practicality and adequacy. 2530.20

Revaluation of the policy liabilities

.24 Ideally, for each adverse scenario, the policy liabilities would be revalued throughout the forecast period. But their revaluation only at the end of the forecast period may be a suitable compromise, unless the actuary believes, given the financial position at the end of the forecast period, that the financial condition would not be satisfactory at some point during the forecast period if revaluation were performed at that point.

Interim investigation

.25 In rare cases, a material adverse change in the insurer's circumstances since the last annual investigation may be so far reaching that to delay reporting to the time of the next annual investigation would be imprudent. For example, failure to meet the minimum applicable regulatory capital requirement, or adoption of a radically different business plan, may make an immediate report urgent. In such a case, the actuary would undertake and report on an interim investigation.

~~4.1~~2540 REPORTING

.01 In the case of a Canadian insurer, the actuary would report to the Board of Directors or to their audit committee if they so delegate. In the case of a Canadian branch of a foreign insurer, the actuary would report to the Chief Agent for Canada and may also report to the responsible senior executive in the parent head office.

.02 In order to give the insurer's senior management an opportunity to react to the results of the investigation, the actuary would normally discuss the report with the insurer's senior management in advance of its submission to the Board of Directors or Chief Agent for Canada.

.03 The report would be in writing, but an additional oral report which permits questions and discussions is desirable. An interpretative report is more useful than a statistical report.

.04 The timing of the report would depend on the urgency of the matters reported and on the desirability of integrating dynamic capital adequacy testing into the insurer's annual financial planning cycle. The annual report would be submitted within twelve months of each fiscal year-end.

~~4.1~~2550 OPINION

.01 *The report should contain an opinion signed by the actuary. The purpose of the opinion is to report on the financial condition of the insurer*. [effective 1/1/99]

.02 In this opinion, "future financial condition" has the same meaning as "financial condition." The actuary may use the words "future financial condition" in order to comply with legislation or regulation in some jurisdictions.

.03 The wording of the opinion follows: [insert appropriate wording where indicated by square brackets]

> "I have completed my annual investigation of the [future] financial condition of [company name] as at [date] in accordance with accepted actuarial practice.
>
> I have analyzed the forecasted financial positions of the company during the [number] year forecast period under a series of scenarios. A description of these scenarios and their impact on the company is included within this report.
>
> The analysis incorporates assumptions relating to business growth, investments, [mortality, morbidity, claims frequency, capital injections, other policy-related experience] and other internal and external conditions during the forecast period as well as potential management responses to various plausible adverse scenarios. The most significant assumptions are described within this report.
>
> In my opinion, the [future] financial condition of the company [is satisfactory under these assumptions or is not satisfactory for the following reason(s)…].
>
> [Montreal, Quebec [Mary F. Roe]
>
> [Report date] Fellow, Canadian Institute of Actuaries"
>
> ~~[signature of actuary]~~
>
> ~~[typed name of actuary]~~
>
> ~~Fellow, Canadian Institute of Actuaries~~
>
> ~~[Report date]"~~