



Actuarial Standards Board
Conseil des normes actuarielles

Final Standards

Final Standards – Revisions within the Practice-Specific Standards for Insurance (Sections 2400 and 2500)

Actuarial Standards Board

February 2018

Document 218023

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Allocation of expenses to participating account(s) opinion

I have reviewed the method established by the Board of Directors for determining the portion of the expenses, including taxes, of [the company] for the financial year ending [XX] that is allocable to the participating account [each participating account] maintained by the company. I conducted my review in accordance with accepted actuarial practice in Canada and pursuant to the guidance of the Superintendent of Financial Institutions.

In my opinion, the method is fair and equitable to the participating policyholders.

Mary F. Roe

Fellow, Canadian Institute of Actuaries

[Place of issue of opinion]

[Date of opinion]

- .08 If the appointed actuary is unable to issue an unqualified opinion, the wording of the opinion would be adjusted to reflect the necessary qualification.

2460 Communication with the auditor

- .01 Communication with the insurer's auditor would be 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.

2470 Certification of capital filings as required by the regulator

- .01 This subsection 2470 applies to the appointed actuary of a life insurer when giving an opinion on the appropriateness of regulatory capital calculations pursuant to law or on the appropriateness of internal models used to determine required capital for segregated fund guarantees pursuant to requirements of the regulator.

- .02 Such certifications should contain an opinion signed by the appointed actuary. [Effective April 15, 2017]

Appropriateness of regulatory capital calculations

- .03 The appointed actuary should prepare a report to support the opinion on the appropriateness of regulatory capital calculations that outlines the areas where the calculation required discretion or significant technical calculations, and the methods and judgments that were applied. The report should be completed before the provision of a signed opinion pursuant to subsection 2470. [Effective February 22, 2018]

- .04 The opinion would be provided annually in support of the fiscal year-end regulatory capital filing on form(s) as directed by the regulator.
- .05 In providing such an opinion, the actuary would not be opining on whether the underlying factors or specified methods to be followed are appropriate but rather on the appropriateness of any interpretation and discretionary technical calculations and methods with respect to such guidelines.
- .06 Here is the standard opinion language [insert appropriate wording where indicated by square brackets].

“I have reviewed the calculation of the Life Insurance Capital Adequacy Test ratios of [company name] as at [date]. In my opinion, the calculations of the components of the base solvency buffer, available capital, surplus allowance, and eligible deposits have been determined in accordance with the regulatory guidelines, and the components of the calculations requiring discretion were determined using method and judgement appropriate to the circumstances of the company.”

[Note: For application to branches “Life Insurance Capital Adequacy Test ratios” is replaced by “Life Insurance Margin Adequacy Test (LIMAT)” and “Base Solvency Buffer” is replaced by “Required Margin” and “Available Capital” is replaced by “Available Margin”.]

[Note: For filings for provincially regulated companies, the ratio definition, and definitions of base solvency buffer, required capital, available capital, surplus allowance, and eligible deposits, would be amended to reflect the appropriate definitions in the provincial requirements.]

Appropriateness of internal models used to determine required capital for segregated fund guarantees

- .07 The appointed actuary should prepare a report to support the opinion on the appropriateness of internal models used to determine required capital for segregated fund guarantees that outlines how the models comply with the related requirements of the regulator. The report should be completed before the provision of a signed opinion pursuant to subsection 2470. [Effective April 15, 2017]

- .08 The opinion would be provided annually in support of the fiscal year-end regulatory capital filing on form(s) as directed by the regulator. The opinion would also be provided to the regulator upon a new application to the regulator for permission to use such a model for required capital purposes and upon request of the regulator when making a modification to an existing model approved by the regulator.
- .09 In providing such an opinion, the actuary would not be opining on whether the underlying factors or specified methods to be followed are appropriate, but rather on the compliance with the requirements of the regulator.
- .10 Here is the standard opinion language [insert appropriate wording where indicated by square brackets].

“I have reviewed the internal model of [company name] for determining required capital for segregated fund guarantee risks as at [date] in the context of the requirements of [the regulator]. In my opinion, the [proposed] model is compliant in all material respects with the requirements of [the regulator] for an approved model used to determine required capital for segregated fund guarantee risks.”

2500 Dynamic Capital Adequacy Testing

2510 Scope

- .01 Part 1000 applies to work within the scope of this section 2500.
- .02 This section 2500 applies to the appointed actuary of an insurer when preparing a report on the insurer's financial condition pursuant to law.

2520 Analysis

- .01 The appointed actuary should make an investigation at least once during each financial year of the insurer's recent and current financial position and financial condition, as revealed by dynamic capital adequacy testing for selected scenarios. [Effective April 15, 2017]
- .02 The appointed actuary should make a report of each investigation in writing to the insurer's board of directors (or to the appropriate committee of the board such as audit committee, risk committee, etc. if they so delegate) or its chief agent for Canada. The report should identify possible actions for dealing with any threats to satisfactory financial condition that the investigation reveals. [Effective February 22, 2018]
- .03 The appointed actuary should ensure that the investigation is current. The investigation should take into consideration recent events and recent financial operating results of the insurer. [Effective April 15, 2017]

- .04 The timing and frequency of the appointed actuary's investigations would be sufficient to support timely corrective actions by management and the board of directors or chief agent for Canada.

Recent and current financial position

- .05 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

- .06 Dynamic capital adequacy testing examines the effect of selected plausible adverse scenarios on the insurer's forecasted capital adequacy. It would be one of the actuary's primary tools for investigation of an insurer's financial condition.
- .07 The purpose of dynamic capital adequacy testing is to identify plausible threats to satisfactory financial condition, actions that would lessen the likelihood of those threats, and actions that would mitigate a threat if it materialized.

- .08 Dynamic capital adequacy testing is defensive, i.e., it addresses threats to financial condition rather than the exploitation of opportunity.

Satisfactory financial condition

- .09 The insurer's financial condition would be satisfactory if throughout the forecast period,
- Under the base scenario, the insurer meets the supervisory target(s); and
 - Under the base scenario and all plausible adverse scenarios, the statement value of the insurer's assets is greater than the statement value of its liabilities.

Data, methods, and assumptions

- .10 The actuary would start the forecast period using the data as of the most recent available fiscal year-end statement of financial position date.
- .11 The assumptions and methods would reflect up-to-date studies and analysis available to the actuary.
- .12 The policy liabilities would be revalued at the end of the first financial year of the forecast period if a change in assumptions or method that is expected to be made by the insurer would result in a material change to the financial position of the insurer.
- .13 The actuary would consider recent events and recent operating results of the insurer up to the date of the report. The opening position would be consistent with the most recent year-end financial reporting.
- .14 If an adverse event occurs between the date of the report and the date of its presentation to the insurer's board of directors (or its chief agent for Canada), then the actuary would, at a minimum in the presentation to the insurer's board of directors (or its chief agent for Canada), address the event and its potential implications on the results of the investigation. If appropriate, the actuary would redo the investigation.

Forecast period

- .15 The forecast period would begin at the date of the most recent available fiscal year-end statement of financial position. The forecast period for a scenario would be sufficiently long to capture the effect of its adversity and the ability of management to react. The forecast period for a typical life insurer would not be less than five fiscal years. The forecast period for a typical property and casualty insurer would not be less than three fiscal years.

Scenarios

- .16 The scenarios would consist of a base scenario and several plausible adverse scenarios. Each scenario takes into account not only in-force policies but also the policies assumed to be sold or acquired during the forecast period, and both insurance and non-insurance operations (e.g., asset management, banking, or trust company subsidiaries).

Base scenario

- .17 The base scenario would be a realistic set of assumptions used to forecast the insurer's financial position over the forecast period. Normally, the base scenario would be consistent with the insurer's business plan. The actuary would 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

- .18 An adverse scenario is a scenario with an adverse outcome developed by stress-testing the assumptions used in forecasting the business plan, including the determination of insurance contract liabilities, with regard to risk factors that may trigger potential threats to the insurer's financial condition. An adverse scenario would be characterized as a plausible adverse scenario if it is credible and has a non-trivial probability of occurring. The actuary may use percentile rankings of outcomes to determine whether a scenario is both plausible and adverse. Plausible adverse scenarios vary among insurers and may vary over time for a particular insurer.
- .19 The actuary would consider material, plausible risks or events to the insurer. Reverse stress-testing can help assess whether certain risk factors need to be tested, on the grounds that certain risk factors could never deteriorate to the point where they would be a threat to the insurer's financial condition. The actuary can thereby determine whether a material, plausible risk or event exists for the insurer over the forecast period.

Risk categories

- .20 For life insurers, the actuary would consider threats to capital adequacy under plausible adverse scenarios that include, but are not limited to, the risk categories
- Mortality;
 - Morbidity;
 - Persistency and lapse;
 - Market (includes interest rate, equity, real estate, and currency);
 - Inflation;
 - Credit;
 - Reinsurance;
 - New business;
 - Expenses;
 - Government and political issues;
 - Off-balance-sheet items; and
 - Related companies.
- .21 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 risk categories
- Claim frequency and severity;
 - Policy liabilities;
 - Inflation;
 - Premium;
 - Reinsurance;
 - Investment;
 - Government and political issues;
 - Off-balance-sheet items; and
 - Related companies.

Integrated scenarios

- .22 The actuary would construct integrated scenarios by combining two or more risk factors whose combination gives rise to a plausible adverse scenario.
- .23 In developing integrated scenarios, the actuary would consider how risk factors interact. For example, the impact of combining adverse scenarios for two or more risk factors, where each is associated with a relatively high probability, may give rise to an integrated adverse scenario to which the insurer's financial condition is sensitive. In such cases, an integrated scenario would be constructed by combining stress tests related to two or more risk factors. An integrated scenario would be designed so as to itself constitute a plausible adverse scenario.
- .24 An integrated scenario would be included in the minimum of three plausible adverse scenarios required by paragraph 2520.32 if the integrated scenario was found to be one of the three most adverse scenarios.

Ripple effects

- .25 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.
- .26 Ripple effects would include both policy owner action and the insurer's expected response to adversity. Selection of the assumptions for the insurer's response would, where appropriate, take into account
- Effectiveness of the insurer's management information systems and adjustment mechanisms;
 - Insurer's historical record of promptness and willingness, when faced with adversity, to make difficult decisions; and
 - External environment assumed in the scenario.
- .27 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.
- .28 Ripple effects also include regulatory action, especially under any plausible adverse scenario where the insurer fails to meet the supervisory target capital requirement. The actuary would consider action that could be taken by the Canadian regulator(s) as well as action taken by regulators in foreign jurisdictions. Such regulatory action and associated management response would consider the local assessment of solvency regardless of the insurer's worldwide solvency position as measured by Canadian regulatory standards.

Corrective management actions

- .29 For each of the plausible adverse scenarios that would result in a threat to satisfactory financial condition, the actuary would identify possible corrective management actions that would lessen the likelihood of that threat, or that would mitigate that threat, if it materialized. These actions could include but are not limited to
- Repricing the insurance products;
 - Suspending dividend payments, capital reductions, and transfers to the parent or home office, where applicable;
 - Raising additional capital or adopting an approved plan to raise additional capital if and when needed within a reasonable timeframe, or, in the case of a branch, requesting transfer of adequate funds from the parent company;
 - Strengthening risk management practices;
 - Mitigating the risk causing the capital shortfall; and
 - An increased level of monitoring and reporting with respect to the insurer's capital position.
- .30 Consideration would also be given to the effectiveness of planned management actions in a volatile or stressed environment.

Scope of the investigation and report

- .31 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.
- .32 The report would disclose each of the risk categories considered in undertaking the dynamic capital adequacy testing analysis, including those identified in these Standards of Practice. It is expected that the actuary would scenario test and report at least once during each financial year on the base scenario, and a minimum of three plausible adverse scenarios posing the greatest risk for the insurer. Fewer than three plausible adverse scenarios may be reported only in the rare event that it is not possible to develop such scenarios.
- .33 The report would also contain the plausible adverse scenarios examined that cause the insurer to fall below the supervisory target capital requirement. 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.

- .34 If the investigation identifies any plausible threat to satisfactory financial condition, then the actuary would identify possible corrective management action that would lessen the likelihood of that threat, or that would mitigate that threat, if it materialized. For each such adverse scenario reported upon, the actuary would report the results both with and without the effect of corrective management action. The actuary would ensure that the disclosure of the corrective management action was sufficiently clear so that users may consider its practicality and adequacy.
- .35 The report would present the financial position of the insurer at each fiscal year-end throughout the forecast period.

Revaluation of the policy liabilities

- .36 Ideally, for the base and each plausible adverse scenario, the insurance contract liabilities and, if applicable, other policy liabilities or reinsurance recoverables, 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.

Frequency and/or timing

- .37 The frequency and/or timing of the report would depend on the urgency of the matters being reported and on the desirability of integrating dynamic capital adequacy testing into the insurer's financial planning cycle.
- .38 The frequency and/or timing of the actuary's investigation would be adjusted where an adverse change in the insurer's circumstances since the last investigation may be so significant that to delay reporting to the time of the next scheduled investigation would be imprudent. For example, failure to meet the supervisory target capital requirement, or adoption of a radically different business plan, may necessitate the preparation of an immediate report.

2530 Reporting

- .01 In the case of a Canadian insurer, the appointed actuary should report to the board of directors or to an appropriate committee of the Board (audit committee, risk committee, etc.) if they so delegate. In the case of a Canadian branch of a foreign insurer, the appointed actuary should report to the chief agent for Canada and may also report to the responsible senior executive in the parent head office. [Effective February 22, 2018]
- .02 In order to give the insurer's senior management an opportunity to react to the results of the investigation, the actuary would 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 that permits questions and discussions is desirable. An interpretative report would be more useful than a statistical report.
- .04 The report would be submitted within 12 months following each fiscal year-end.

2540 Opinion by the actuary

.01 The report should contain an opinion signed by the appointed actuary. [Effective April 15, 2017]

- .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 investigation of the [future] financial condition of [insurer name] as at [date] in accordance with accepted actuarial practice in Canada.

I have analyzed the forecasted financial positions of the insurer during the [number] year forecast period under a series of scenarios. A description of these scenarios and their impact on the insurer is included within this report.

The most significant assumptions are described within this report. The investigation 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.

My report includes the identification of key risk exposures [and corrective management actions that could be taken to mitigate the effect of plausible adverse scenarios].

In my opinion, the [future] financial condition of the insurer [is satisfactory or is not satisfactory for the following reason(s)...]”

[Montréal, Québec]
[Report date]

[Mary F. Roe]
Fellow, Canadian Institute of Actuaries