3000 – Pension Plans

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3100 Scope

.00 Part 1000 applies to work within the scope of this part 3000.

.01 The standards in part 3000 apply as follows:

- Section 3200 applies to advice that an actuary provides regarding the funded status or funding of a pension plan, except where such advice is with respect to:
  - The wind-up, in full or in part, of a pension plan; or
  - The financial reporting of a pension plan's costs and obligations in the employer's or the pension plan's financial statements;
- Section 3300 applies to advice that an actuary provides on the funded status or funding with respect to the wind-up, in full or in part, of a pension plan;
- Section 3400 applies to advice that an actuary provides with respect to financial reporting of a pension plan's costs and obligations in the employer's or the pension plan's financial statements; and
- Section 3500 applies to advice that an actuary provides regarding the computation of commuted values in the circumstances described in subsection 3510.

The wind-up of a pension plan involves the settlement of plan benefits and distribution of all plan assets. The cessation of benefit accruals or termination of a plan, not involving the settlement of plan benefits and distribution of plan assets, would not constitute a plan wind-up.

.02 The standards in sections 3200 through 3400 apply to advice with respect to a pension plan, including any arrangement that provides retirement income to its members, whether funded or not, whether registered or not, and whether in the private or public sector, except for:

- A defined contribution pension plan (noting that the standards do apply, however, to any pension plan that is a hybrid of a defined contribution pension plan and a defined benefit pension plan);
- A pension plan whose benefits are all guaranteed by a life insurer; and
- Social security programs such as the Canada Pension Plan, Québec Pension Plan, and the pension provided by the federal Old Age Security Act.

3200 Advice on the Funded Status or Funding of a Pension Plan

.01 This section 3200 applies to advice that an actuary provides regarding the funded status or funding of a pension plan, except where such advice is with respect to:

- The wind-up, in full or in part, of a pension plan; or
- The financial reporting of a pension plan's costs and obligations in the employer's or the pension plan's financial statements.

3210 General

.01 The actuary's advice on the funded status or funding of a pension plan should take account of the circumstances affecting the work. [Effective February 1, 2018]

.02 The actuary should select an actuarial cost method that is consistent with the circumstances affecting the work. [Effective February 1, 2018]

.03 The actuary should select an asset valuation method that is consistent with the circumstances affecting the work. [Effective February 1, 2018]

.04 The actuary's advice on the funded status of a pension plan should take account of the pension plan's benefits at the calculation date, except that the actuary's advice may anticipate a pending amendment to the pension plan that increases the value of its benefits. [Effective December 31, 2010]

.05 The actuary's advice on the funded status or funding of a pension plan should take account of expenses if they are expected to be paid from the pension plan's assets. [Effective December 31, 2010]

.06 The actuary's advice on the funded status or funding of a pension plan may, consistent with the circumstances affecting the work, take into account the value and the terms of a letter of credit of which the pension plan is the beneficiary. [Effective February 1, 2018]

.07 If the actuary is providing advice on funding:

- The actuary should determine the next calculation date, and
- The actuary's advice on funding should cover at least the period between the calculation date and the next calculation date. [Effective December 31, 2010]

Circumstances affecting the work

.08 For the purposes of section 3200, the circumstances affecting the work would include:

- Whether the actuary's advice relates to the funded status or the funding of the pension plan, or a combination thereof;
- The terms of the appropriate engagement under which the work is being performed; and
- The application of the law to the work.

.09 In the case of a pension plan registered under the Income Tax Act (Canada), the actuary would be familiar with guidance with respect to the funding of pension plans that has been published by an applicable regulatory authority.

.10 Advice on funding would include:

- A valuation to establish the amount of a letter of credit to secure the payment of pension plan benefits;
- Advice regarding an amount of assets to be earmarked, but not segregated, to a trust fund, to cover pension benefit commitments; and
- Advice on the funding implications of a plan amendment.

.11 The terms of an appropriate engagement may specify applicable objectives of funding, which may include a formal or informal funding policy. For example, the terms of an appropriate engagement for a pension plan registered under the Income Tax Act (Canada):

- May be limited to preparation of an external user report on the basis of applicable law including the minimum contributions required by law;
- May require the preparation of an external user report recommending contributions reflecting objectives of funding specified by the plan sponsor or plan administrator, as applicable, in addition to the requirements of law; and
- Where contributions are fixed, may require the preparation of an external user report reflecting objectives of funding specified by the plan administrator or other appropriate authority, as applicable in addition to the requirements of law.

.12 The terms of an appropriate engagement may specify the use of a particular actuarial cost method and/or a particular asset valuation method, consistent with these standards.

.13 Objectives of funding specified by the terms of an appropriate engagement may include considerations such as the security of benefits and related provisions for adverse deviations, the orderly and rational allocation of contributions among time periods, and/or inter-generational equity.

.14 Depending on the circumstances affecting the work, the actuary's advice on funding may describe a range of contributions.

Actuarial cost methods

.15 Actuarial cost methods include:

- Cost allocation methods, which allocate the actuarial present value of projected benefits among time periods, including attained age actuarial cost methods, entry age actuarial cost methods, aggregate actuarial cost methods, and individual level premium actuarial cost methods;
- Benefit allocation methods, which allocate a portion of the actuarial present value of projected benefits to a time period as a function of the change in accrued or projected benefits during the period, including the accrued benefit actuarial cost method, the unit credit actuarial cost method and the projected unit credit actuarial cost method; and
- Forecast actuarial cost methods, which allocate a portion of the actuarial present value of projected benefits to the forecast period based on:
    - The actuarial present value, at the calculation date, of projected benefits at the end of the forecast period including, if appropriate, benefits for those who are expected to become members between the calculation date and the end of the forecast period;

  minus

    - The actuarial present value of projected benefits at the calculation date;

  plus

    - The actuarial present value, at the calculation date, of benefits expected to be paid during the forecast period.

.16 When using a forecast actuarial cost method, the beginning and ending actuarial present value of projected benefits may be calculated from the perspective of either a hypothetical wind-up valuation or a going concern valuation.

Asset valuation methods

.17 The use of an asset valuation method that produces an asset value different from market value may be appropriate depending on the circumstances affecting the work. For example, the use of a smoothed asset value may be appropriate to moderate the volatility of contribution rates for purposes of advice on funding.

.18 The value of assets may be, subject to specific requirements for different types of valuation, any of:

- Their market value;
- Their market value adjusted to moderate volatility in investment returns;
- The present value of their cash flows after the calculation date; and
- Their value assuming a constant rate of return to maturity in the case of illiquid assets with fixed redemption values.

Deferred recognition of pending amendment

.19 If, at the calculation date, an amendment to the pension plan is definitive or virtually definitive:

- If the effective date of the amendment is during the period for which the report gives advice on funding, then the advice on funding up to the effective date may disregard the amendment, unless otherwise required by law, but the advice on funding after the effective date would take the amendment into account; or
- If the effective date of the amendment is after the period for which the report gives advice on funding, then the advice on funding may disregard the amendment unless otherwise required by law.

.20 The effective date of the amendment is the date at which the amended benefits take effect, as opposed to the date at which the amendment becomes either definitive or virtually definitive.

Next calculation date

.21 The next calculation date is the latest date for which the actuary considers the advice on funding to be applicable. The actuary would take into consideration the law and the terms of an appropriate engagement in determining the next calculation date.

3220 Types of Valuations

.01 When giving advice on the funded status or funding of a pension plan, the actuary should undertake one or more types of valuations that are consistent with the circumstances affecting the work. [Effective February 1, 2018]

Types of valuations

.02 There are different types of valuations that an actuary may undertake when giving advice on the funded status or funding of a continuing pension plan, the most common of which are:

- A going concern valuation;
- A hypothetical wind-up valuation; and
- A solvency valuation.

3230 Going Concern Valuation

.01 For a going concern valuation the actuary should:

- Assume that the plan continues indefinitely;
- Select either best estimate assumptions or best estimate assumptions modified to incorporate margins for adverse deviations to the extent, if any, required by law or by the terms of an appropriate engagement; and
- Consider all benefits of which the actuary is aware, including contingent benefits, payable under the pension plan and should include provision for all such benefits expected to be paid while the plan is ongoing unless:
  - The law requires the valuation to exclude such benefits; or
  - The law permits the exclusion of such benefits and the terms of an appropriate engagement stipulate that the actuary exclude such benefits. [Effective February 1, 2018]

Assumptions

.02 For pension plans that are funded, in selecting the best estimate assumption for the discount rate, the actuary may either:

- Take into account the expected investment return on the assets of the pension plan at the calculation date and the expected investment policy after that date; or
- Reflect the yields on fixed income investments, considering the expected future benefit payments of the pension plan and the circumstances affecting the work.

.03 In establishing the discount rate assumption, the actuary would assume that there will be no additional returns achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy except to the extent that the actuary has reason to believe, based on relevant supporting data, that such additional returns will be consistently and reliably earned over the long term.

.04 If the plan is a "designated plan" as that term is defined in the Income Tax Regulations (Canada) and the purpose of the going concern valuation is to determine the maximum funding permitted by law, then the actuary would use assumptions stipulated by law for that purpose.

Contingent benefits

.05 An example of a contingent benefit relevant to a going concern valuation is a provision granting the employer or plan administrator the right to waive early retirement reductions to members retiring from active employment. In making provision for such a contingent benefit, the actuary would consider past experience, current circumstances and future expectations relating to the employer's or plan administrator's granting of such benefits.

Benefits stipulated by law

.06 If the plan is a "designated plan", as that term is defined in the Income Tax Regulations (Canada), and the purpose of the going concern valuation is to determine the maximum funding permitted by law, then the actuary would reflect the benefits stipulated by law for that purpose.

3240 Hypothetical Wind-up Valuation

.01 A hypothetical wind-up valuation determines the funded status of a pension plan on the assumption that the plan is wound up at the calculation date. The standards for a full wind-up valuation in section 3300 apply to a hypothetical wind-up valuation except for the external user report requirements therein and as superseded by the following recommendations. [Effective September 18, 2013]

.02 For a hypothetical wind-up valuation, the actuary should determine benefit entitlements on the assumption that the pension plan has neither a surplus nor a deficit. [Effective September 18, 2013]

.03 In determining the benefit entitlements, the actuary should postulate a scenario upon which the hypothetical wind-up valuation is based, taking account of the circumstances affecting the work. [Effective February 1, 2018]

.04 The actuary should take account of contingent benefits that would be payable under the postulated scenario for the hypothetical wind-up. [Effective September 18, 2013]

.05 For a hypothetical wind-up valuation, the actuary may assume that the wind-up date, the calculation date and the settlement date are coincident. [Effective September 18, 2013]

.05.1 For a hypothetical wind-up valuation, the actuary may assume that benefits would be settled by the purchase of annuities regardless of any limitation of capacity in the market for group annuity contracts. [Effective September 18, 2013]

.06 For a hypothetical wind-up valuation, the value of assets should be the market value of assets. [Effective September 18, 2013]

.07 For a hypothetical wind-up valuation, the actuary should select an explicit assumption for expenses expected to be payable from the pension plan's assets to wind up the pension plan. [Effective September 18, 2013]

Membership data

.08 The precision of the membership data is less critical for a hypothetical wind-up valuation than for an actual wind-up valuation.

.09 Since an actual wind-up is not occurring, pertinent membership data may not be available. The actuary would make appropriate assumptions regarding such missing membership data. For example, it may be appropriate to retroject current earnings based on aggregate historical pay increases in order to estimate final average earnings.

Postulation of scenarios

.10 There are often multiple scenarios regarding the circumstances that may result in the wind-up of a pension plan. For a hypothetical wind-up valuation, the actuary may postulate any reasonable, internally consistent, scenario regarding the circumstances resulting in the wind-up of a pension plan, consistent with the circumstances affecting the work. For the postulated scenario, the actuary would reflect the treatment of any contingent benefits, including:

- Those that are contingent upon the wind-up scenario, such as a plant closure benefit; or
- Those that are required by law, such as a provision for earlier commencement of deferred pension entitlements in the event of plan wind-up; and
- Those that are contingent upon a factor other than the wind-up scenario.

.11 Examples of contingent benefits that are dependent upon factors other than the wind-up scenario or as required by law are:

- A provision granting the employer or plan administrator the discretion to waive early retirement reductions; and
- A provision providing enhanced benefits if funds are sufficient.

Subsequent events

.12 The actuary may reflect subsequent events in the valuation provided that doing so either increases the actuarial present value of the projected benefits at the calculation date or reduces the value of the pension plan's assets at the calculation date.

Wind-up expenses

.13 Since the actuary would assume that the pension plan has neither a surplus nor a deficit, wind-up expenses related to the resolution of surplus or deficit issues need not be considered.

.14 In developing the assumption for expenses expected to be payable from the pension plan's assets to wind up the pension plan, the actuary would also make an assumption as to the solvency of the employer. The assumption with respect to the payment of expenses and the assumption with respect to the solvency of the employer would be consistent.

Settlement Methods

.15 A hypothetical wind-up valuation requires the actuary to select assumptions about the methods of settlement.

.16 The actuary may assume a settlement method permitted by law or any relevant regulatory policy or guideline.

.17 The actuary may assume settlement by means of a replicating investment portfolio if permitted by law or any regulatory policy or guideline, or where it is anticipated that annuities could not be purchased due to group annuity capacity limitations. The assumed replicating portfolio would provide for an appropriate level of security for the pension benefits covered.

.18 The actuary may incorporate assumptions as to the exercise of regulatory discretion, a change in law, or a plan amendment which would be required to enable a practical settlement of benefits. When making such assumptions, the actuary would consider any relevant regulatory policy, guidance, or precedent.

.19 For example, for a plan where pensions are indexed with the Consumer Price Index and where it is impractical to purchase annuities indexed with the Consumer Price Index, the actuary may assume that annuities would be purchased with indexing at a fixed percentage rate of comparable value to indexing in accordance with the plan provisions.

3250 Solvency Valuation

.01 A solvency valuation typically is a form of a hypothetical wind-up valuation required by law and the actuary should apply the standards for a hypothetical wind-up valuation unless:

- Otherwise required by law; or
- Otherwise permitted by law and stipulated by the terms of an appropriate engagement. [Effective December 31, 2010]

.02 Examples of exceptions permitted by law for the preparation of a solvency valuation under the law of certain jurisdictions include:

- Use of a value of assets other than market value;
- Use of one or more assumptions that are not best estimate assumptions; or
- Exclusion of certain benefits from the valuation.

3255 Other Valuations

.01 For a valuation that is not a going concern valuation, a hypothetical wind-up valuation, or a solvency valuation, the actuary should select actuarial methods and actuarial assumptions that are consistent with the terms of an appropriate engagement. [Effective December 30, 2012]

.02 To the extent that a valuation is not a going concern valuation, hypothetical wind-up valuation, or solvency valuation, but has characteristics similar to one or more of these types of valuations, the actuary would consider any relevant standards for these types of valuations in undertaking the work.

.03 For example, a valuation for determining the required amount of a letter of credit for a supplemental plan is typically similar to a hypothetical wind-up valuation, but with the actuarial methods and actuarial assumptions stipulated by the terms of the engagement. In such circumstances, the actuary would consider the relevant standards for hypothetical wind-up valuations in undertaking the work.

3260 Reporting: External User Report

.01 An external user report on work pursuant to section 3200 should:

- Include the calculation date, the report date, and the next calculation date;
- Describe the sources of membership data, plan provisions, and the pension plan's assets, and the dates at which they were compiled;
- Describe the membership data and any limitations thereof;
- Describe the tests applied to determine the sufficiency and reliability of the membership data and plan asset data for purposes of the work;
- Describe the assets, including their market value and a summary of the assets by major category;
- Describe the pension plan's provisions, including the identification of any pending definitive or virtually definitive amendment;
- Disclose subsequent events of which the actuary is aware, whether or not the events are taken into account in the work, or, if there are no subsequent events of which the actuary is aware, include a statement to that effect;
- State the type of each valuation undertaken under the terms of the appropriate engagement; and
- Describe any significant terms of the appropriate engagement that are material to the actuary's advice. [Effective February 1, 2018]

.02 For each going concern valuation undertaken by the actuary, the external user report should:

- Describe the rationale for any assumed additional returns, net of investment management expenses, from an active investment management strategy as compared to a passive investment management strategy, included in the discount rate assumption;
- Report the funded status at the calculation date and the service cost or the rule for calculating the service cost between the calculation date and the next calculation date;
- Disclose any pending but definitive or virtually definitive amendment of which the actuary is aware, and whether or not such amendment has been included in determining the funded status and the service cost;
- Describe any contingent benefits provided under the pension plan and the extent to which such contingent benefits are included or excluded in determining the funded status and the service cost;
- Describe any benefits that are not contingent benefits and that have been excluded in determining the funded status and the service cost; and
- If there is no provision for adverse deviations, include a statement to that effect. [Effective March 31, 2015]

.03 If an external user report includes one or more going concern valuations then the external user report should, for at least one such valuation included in the report, describe and quantify the gains and losses between the prior calculation date and the calculation date, unless the going concern valuation is based on an extrapolation of results disclosed in a previous external user report. [Effective March 1, 2019]

.04 Repealed

.05 For each hypothetical wind-up valuation and solvency valuation undertaken by the actuary, the external user report should:

- Describe the basis for inclusion and the amount considered in respect of a letter of credit of which the pension plan is the beneficiary;
- Report the funded status at the calculation date;
- Include a description of the postulated scenario; and
- Include a description of the extent to which contingent benefits provided under the pension plan are included or excluded in determining the funded status. [Effective March 31, 2015]

.06 Repealed

.06.1 For each valuation that is not a going concern valuation, a hypothetical wind-up valuation, or a solvency valuation, the external user report should:

- Include a description of the extent to which contingent benefits provided under the pension plan are included or excluded. [Effective March 31, 2015]

.06.2 If an external user report includes one or more going concern valuations then the external user report should, for at least one such valuation included in the report, report the effects of using a discount rate 1.0% lower than that used for the valuation on:

- The actuarial present value, at the calculation date, of projected benefits allocated to periods up to the calculation date; and
- The service cost or the rule for calculating the service cost between the calculation date and the next calculation date;

unless

- The purpose of the valuation is the determination of the maximum funding permitted by law for a "designated plan", as that term is defined in the Income Tax Regulations (Canada); or
- The going concern valuation is for a pension plan which is not registered under a pension benefits standards act of a province or the federal government of Canada; or
- The going concern valuation is based on an extrapolation of results disclosed in a previous external user report. [Effective March 1, 2019]

.06.3 If an external user report includes one or more hypothetical wind-up valuations or solvency valuations then, for any one such hypothetical wind-up valuation or solvency valuation, the external user report should:

- Report the incremental cost between the calculation date and the next calculation date, in respect of the defined benefit portion of the plan;
- If the external user report does not include a going concern valuation, report the service cost or the rule for calculating the service cost between the calculation date and the next calculation date in respect of the defined contribution portion of the plan;
- Report the effect on the hypothetical wind-up or solvency liabilities, at the calculation date, of using a discount rate 1.0% lower than that used for the valuation; and
- If the external user report does not include a going concern valuation, describe and quantify the gains and losses between the prior calculation date and the calculation date;

unless

- The pension plan is a "designated plan" which has, as members, only persons "connected" with the employer as those terms are defined in the Income Tax Regulations (Canada); or
- The hypothetical wind-up valuation or solvency valuation is for a pension plan which is not registered under a pension benefits standards act of a province or the federal government of Canada; or
- The hypothetical wind-up valuation or solvency valuation is based on an extrapolation of results disclosed in a previous external user report. [Effective March 1, 2019]

.06.4 Where contributions are fixed or restricted by the terms of the pension plan or other governing documents, and the actuarial certification of the funding of the plan in accordance with the law or any regulatory policy or guideline is directly dependent on the results of a stochastic funding model regarding the adequacy of the contributions to the plan to sustain one or more target levels of benefits from the plan, the report should disclose the stochastic funding model results which are relevant to the provision of the actuarial certification. [Effective March 1, 2019]

Plausible adverse scenarios

.06.5 A plausible adverse scenario would be a scenario of adverse but plausible assumptions, relative to the best estimate assumptions otherwise selected for the valuation, about matters to which the pension plan's financial condition is sensitive. Plausible adverse scenarios vary among pension plans and may vary over time for a particular pension plan.

.06.6 If an external user report includes one or more going concern valuations, then the actuary should consider threats to the pension plan's future financial condition under plausible adverse scenarios that include, where appropriate, the following risks:

- Interest rate risk, the potential that interest rates will be lower than expected;
- Deterioration of asset values;
- Longevity risk, the potential that pension plan members will live longer than expected;
- For pension plans where contributions are fixed or restricted by the terms of the plan or other governing documents, the potential that the contribution base will be lower than expected;

unless

- The pension plan is a "designated plan" which has, as members, only persons "connected" with the employer as those terms are defined in the Income Tax Regulations (Canada); or
- The valuation is for a pension plan which is not registered under a pension benefits standards act of a province or the federal government of Canada; or
- The valuation is based on an extrapolation of results disclosed in a previous external user report. [Effective March 1, 2019]

.06.7 In considering the plausible adverse scenarios, the actuary may:

- Make reasonable determinations of the asset classes which are classified as fixed income investments;
- Restrict the impact of interest rate risk to the asset classes deemed to be fixed income investments and to the discount rate to the extent that the discount rate is affected by fixed income investments;
- Assess the impact of the risks in combination, but the actuary would not be required to do so;
- Reflect the impact of any compensating adjustments, such as a potential reduction in any margin implicit in the discount rate in response to a lower interest rate scenario;
- Reference any related work, such as asset-liability modelling work, with which the actuary has been involved or which has otherwise been made available to the actuary.

.06.8 If an external user report includes one or more going concern valuations, then the external user report should, for at least one such valuation included in the report, report the effects on:

- The funded status of the plan on a market value or smoothed value basis at the calculation date, separating the effects on assets and liabilities, where applicable; and
- The service cost or the rule for calculating the service cost between the calculation date and the next calculation date;

of the plausible adverse scenarios selected by the actuary for the risk assessments under paragraph 3260.06.6. [Effective March 1, 2019]

.07 An external user report that provides advice on funding should:

- Describe the determination of contributions or a range of contributions between the calculation date and the next calculation date;
- If contributions are fixed by the terms of the plan or other governing documents, then either:
  - Report that the contributions are adequate to fund the pension plan in accordance with the law; or
  - Report that the contributions are not adequate to fund the pension plan in accordance with the law; and
    - Describe the contributions required to fund the pension plan adequately in accordance with the law;
    - Describe one or more possible ways in which benefits may be reduced such that the contributions would be adequate to fund the pension plan in accordance with the law; or
    - Describe a combination of increases in contributions and reductions in benefits that would result in the funding being adequate to conform to the law. [Effective December 30, 2012]

.08 An external user report should provide the following four statements of opinion, all in the same section of the report and in the following order:

- A statement regarding membership data, which should usually be, "In my opinion, the membership data on which the valuation is based are sufficient and reliable for the purpose of the valuation.";
- A statement as to assumptions, which should usually be, "In my opinion, the assumptions are appropriate for the purpose(s) of the valuation(s).";
- A statement as to methods, which should usually be, "In my opinion, the methods employed in the valuation are appropriate for the purpose(s) of the valuation(s)."; and
- A statement as to conformity, which should be, "This report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada." [Effective December 30, 2012]

.09 An external user report should be sufficiently detailed to enable another actuary to assess the reasonableness of the valuation. [Effective December 30, 2012]

Membership data

.10 Any assumptions and methods used in respect of insufficient or unreliable membership data would be described.

.11 The actuary may describe limitations on the tests conducted in the review of the data which has been determined to be sufficient and reliable for purposes of the valuation(s). For example, the actuary may describe that the data tests will not capture all possible deficiencies in the data and reliance is also placed on the certification of the plan administrator as to the quality of the data.

Types of valuations

.12 The external user report may provide information with respect to multiple valuations, but would, as a minimum:

- If the pension plan is a registered pension plan and is not a "designated plan", as that term is defined in the Income Tax Regulations (Canada), provide information with respect to:
  - A going concern valuation, if mandated by law or specified by the terms of an appropriate engagement;
  - A hypothetical wind-up valuation under the scenario regarding the circumstances resulting in the wind-up that, subject to paragraph 3260.19, maximizes the wind-up liabilities, unless the pension plan and the law do not define the benefits payable upon wind-up; and
  - Any other hypothetical wind-up or solvency valuation mandated by law;
- If the pension plan is a "designated plan" as that term is defined in the Income Tax Regulations (Canada), provide information with respect to:
  - A going concern valuation, if mandated by law or specified by the terms of an appropriate engagement;
  - A hypothetical wind-up valuation under the scenario regarding the circumstances resulting in the wind-up that, subject to paragraph 3260.19, maximizes the wind-up liabilities, unless the pension plan and the law do not define the benefits payable upon wind-up or the plan has, as members, only persons "connected" with the employer as that term is defined in the Income Tax Regulations (Canada); and
  - Any other hypothetical wind-up or solvency valuation mandated by law;

  and

  - If the pension plan is not a registered pension plan, include information with respect to the types of valuations required by the circumstances affecting the work.

Significant terms of appropriate engagement

.13 Significant terms of the appropriate engagement may include matters like:

- The use of a specified actuarial cost method;
- The use of a specified asset valuation method;
- The exclusion of benefits for purposes of a valuation, as permitted by law;
- The extent of margins for adverse deviations, if any, to be included in selecting assumptions;
- A policy to fund only the minimum contributions required by law; and
- Specified methodology for the determination of contribution requirements in excess of the requirements of law.

Service cost

.13.1 For a plan that is a hybrid of a defined contribution pension plan and a defined benefit pension plan, the service cost for a going concern valuation would include the service cost in respect of both the defined contribution portion of the plan and the defined benefit portion of the plan.

Reporting gains and losses

.14 The reported gains and losses for a going concern valuation would include the gain or loss due to a change in the actuarial cost method or a change in the method for valuing the assets and each significant change in assumptions and plan provisions determined at the calculation date. If an amendment to the pension plan prompts the actuary to change the assumptions, the actuary may report the combined effect of the amendment and the resultant change in assumptions.

Discount rate sensitivity

.15 When following the recommendations to illustrate the effect of a change in discount rate on a valuation, the actuary would maintain all other assumptions and methods as used in the underlying valuation.

Incremental cost

.15.1 The incremental cost for a hypothetical wind-up valuation or a solvency valuation represents the present value, at the calculation date, of the expected aggregate change in the hypothetical wind-up liability or solvency liability between the calculation date and the next calculation date, increased for expected benefit payments between the calculation date and the next calculation date.

Methods

.16 For each valuation included in the external user report for which there was a prior valuation, the description of the actuarial cost method would include a description of any change to the actuarial cost method used in the prior valuation and the rationale for such change.

.17 For each valuation included in the external user report for which there was a prior valuation, the description of the method to value the assets would include a description of any differences in change to the asset valuation method used in the prior valuation and the rationale for such change.

Assumptions

.18 For each valuation included in the external user report for which there was a prior valuation, the description of assumptions would include a description of each change to the assumptions from the assumptions used in the prior valuation.

.18.1 When describing the assumptions for methods of settlement for a hypothetical wind-up or solvency valuation, the actuary would describe any related limitations. For example:

- If the settlement method assumes that annuities would be purchased but it might not be possible to purchase annuities on actual wind-up of the plan due to capacity limitations; or
- If the settlement method assumes the exercise of regulatory discretion, a change in law, or a plan amendment for which there is no specific authority.

Scenario that maximizes wind-up liabilities

.19 In reporting the funded status of the pension plan under the scenario regarding the circumstances resulting in the wind-up that maximizes the wind-up liabilities, the actuary would include benefits that are contingent upon the scenario regarding the circumstances resulting in the wind-up or mandated by law. However, the actuary may disregard:

- Benefits that are contingent upon a factor other than the scenario regarding the circumstances resulting in the wind-up or as mandated by law; and
- Possible plan member earnings after the calculation date.

Other types of valuations

.19.1 Valuations that are not going concern valuations, hypothetical wind-up valuations, or solvency valuations are usually similar in nature to one of these three types of common valuations. In preparing the external user report for such a valuation, the actuary would consider the relevant reporting requirements for a type of valuation similar to the valuation undertaken and would include additional disclosures as appropriate.

Statements of opinion

.20 Where different statements of opinion apply in respect of different purposes of the valuation, the above requirements may be modified but would be followed to the extent practicable.

.21 While a separate statement regarding assumptions would generally be included in respect of each purpose of the valuation, the statements regarding assumptions may be combined where the statements do not differ among some or all of the valuation's purposes. The report would indicate clearly which statement regarding assumptions applies to each of the valuation's purposes.

.22 While a separate statement regarding methods would generally be included in respect of each purpose of the valuation, the statements regarding methods may be combined where the statements do not differ among some or all of the valuation's purposes. The report would indicate clearly which statement regarding methods applies to each of the valuation's purposes.

3270 Disclosure for Stochastic Models Used to Comply with Specific Regulatory Pension Plan Funding Requirements

Purposes

.23 For a statutory funding valuation that specifically requires the use of stochastic models to comply with pension plan funding requirements in accordance with the law or any regulatory policy or guideline, the disclosure of model inputs and outputs are meant to

- Assist the users of the report or work product to understand the assumptions and methods used in the model and the distribution of outcomes from the model; and
- Enable another actuary to assess whether the assumptions and methods used in the model and the distribution of outcomes from the model are reasonable.

Model Inputs

.02 The actuary reporting on the results of a statutory funding valuation using stochastic models for the purposes of complying with specific regulatory pension plan funding requirements (e.g., under the New Brunswick Shared Risk Plans Regulation) should disclose the following model inputs:

- Risk management goals, funding policy, deficit recovery plan and funding excess utilization plan or other such policies that require contingent calculations, reflected in the stochastic analysis;
- Number of scenarios and time period over which the scenarios are forecast;
- Methodology used in the stochastic modelling, including the approach to interest rate forecasting and development of the funding liability discount rate;
- Projected experience decrement assumptions and whether or not these are deterministic or stochastic. If the latter, the volatility for the decrements and a description of the model used to simulate scenarios;
- Future valuations' decrement assumptions, if applicable;
- Assumptions for the new entrants into the plan, including population growth assumption and new entrant profiles;
- Methodology for wage increases, if relevant, including increases in the year's maximum pensionable earnings and the defined benefit limit prescribed under the *Income Tax Act (Canada)*;
- Frequency of valuations over the projection period;
- Anticipated expenses charged to the pension fund, broken down separately into
    - Administration expenses (including actuarial, audit, legal, etc.); and
    - Investment management fees, to the extent they are not already reflected in the return assumptions;
- Confirmation of how the discount rate used in valuing the liabilities is affected by the economic scenario. For example, if the discount rate is linked to long-term corporate bond yields, confirmation that the discount rate is adjusted to be consistent with the forecasted scenario, and a description of how that adjustment is made;

- Rationale for any variance in and any relationships among the equity returns, inflation, bond yields, or other economic variables;
- Description of any methodology to vary the standard deviations of and correlations among economic variables;
- For the federal bond yield curve, the initial yield at one-year, 10-year, and 30-year terms;
- The initial credit spreads for provincial and investment-grade corporate bonds at the one-year, 10-year, and 30-year terms, if applicable; and
- The rationale for any trend in bond yields (including any assumption of normalization of the yield curve). [Effective July 1, 2019]

.03 For each of the model inputs listed above, the actuary would indicate material changes and reasons for changes relative to the previous valuation.

Model Outputs

.04 To assist users of the report to understand the model outputs and assess their reasonableness, the following summary of forecasted economic variables should be disclosed as a minimum:

- For inflation and all asset class returns (and wage increases if they incorporate a stochastic component different than inflation):
    - Mean of the annualized compounded value over the entire period;
    - Average annual standard deviation; and
    - Average correlation matrix among these variables over the entire period.
- For the federal bond yield curve, the mean yield at the end of the projection period at the one-year, 10-year, and 30-year terms;
- The mean credit spread for provincial and investment-grade corporate bonds at the end of the projection period at the one-year, 10-year, and 30-year terms, if applicable;
- For at least every other year over the first 10 years and at least every five years thereafter, the following distribution information for the total portfolio return after investment management fees:
    - Percentiles 5%, 25%, 50%, 75%, 95%, mean, and standard deviation; and
- The initial discount rate and mean of the discount rate at the end of the projection period. [Effective July 1, 2019]

.05 The following average forecasted key demographic summary statistics should be disclosed at a minimum of every other year for the first 10 years and every five years thereafter:

- Total number of active participants and their average age, average service, and average projected salary, if relevant;
- Total number of inactive members and the total amount of annual pensions being paid; and
- Mean total liability and active/inactive liability split. [Effective July 1, 2019]

.06 The actuary should provide the following statistics for the projected liability, projected assets, projected funded status, and any other key output from the model upon which the actuary expresses an opinion (e.g., open group funded ratio):

- Percentiles 5%, 25%, 50%, 75%, 95%;
- Mean;
- The average of those values that are below the 5th percentile of the range of values produced by the entire set of modelled scenarios or above the 95th percentile, according to which side of the distribution should be considered unfavorable. As an example, values below the 5th percentile should be expected to be used for value of assets and funded status, whereas values above the 95th percentile should be expected to be used for liabilities; and
- The corresponding average for the values below the 2.5th or above the 97.5th percentile.

These statistics should be provided as a minimum for every other year for the first 10 years and every five years thereafter. [Effective July 1, 2019]

Disclosure Statements

.07 The actuary signing a report on the stochastic modelling should include the following statements:

- While the actuary believes that the model inputs are reasonable at the time this report has been prepared, other reasonable model inputs could be used, resulting in potentially very different distributions of forecasted outcomes; and
- The disclosures in this report have been prepared in compliance with Subsection 3270, Disclosure for Stochastic Models Used to Comply with Specific Regulatory Pension Plan Funding Requirements. [Effective July 1, 2019]

.08 The actuary signing a funding report requiring stochastic modelling should provide the following statement, with appropriate reference to any separate stochastic modelling report:

- The funding valuation assumptions are consistent with the stochastic model inputs. [Effective July 1, 2019]

3300 Full or Partial Wind-up Valuation

.01 This section 3300 applies to advice that an actuary provides on the funded status or funding with respect to the wind-up, in full or in part, of a pension plan.

3310 General

.01 The actuary's advice with respect to a pension plan that is being wound-up, in full or in part, should take account of the circumstances affecting the work. [Effective February 1, 2018]

.02 The actuary should take account of subsequent events up to the cut-off date. [Effective December 31, 2010]

.03 The pension plan's assets should be valued at liquidation value. [Effective December 31, 2010]

Scope

.04 This section is not intended to prescribe the manner in which:

- The pension plan's assets would be allocated between jurisdictions in the case of wind-up of a pension plan covering members in several jurisdictions;
- Benefit entitlements would be determined;
- Contributions to a pension benefits guarantee fund would be determined;
- Funding obligations would be determined; or
- The pension plan's assets would be allocated between the employer and the members or between members themselves.

.05 Rather, those issues would be determined in accordance with the law or the plan provisions, or an entity empowered thereunder to make that determination. It may be appropriate, however, to use the results of the valuation to address one or more of those issues, or to disclose their resolution in the report.

Circumstances affecting the work

.06 For the purposes of section 3300, the circumstances affecting the work would include:

- Whether the actuary's advice relates to the funded status or the funding of the pension plan, or a combination thereof;
- The terms of the appropriate engagement under which the work is being performed; and
- The application of the law to the work.

Cut-off date

.07 The cut-off date would be the date up to which subsequent events would be recognized in the valuation.

Partial wind-up

.08 A partial wind-up occurs when a subset of the members terminates membership in circumstances that require wind-up with respect to those members. Such wind-up does not apply to the continuing members, although it may be necessary, for legal or other reasons, also to value the benefits of the continuing members.

.09 The law regarding partial wind-ups varies by jurisdiction. As a result, the application of law can cause a partial wind-up to range from an insignificant change in the pension plan to something similar to a full wind-up.

.10 The standards for a partial wind-up are the same as the standards for a full wind-up. Their application may be easier, however, when the partial wind-up applies to relatively few members. For example:

- The standard of materiality for determination of benefit entitlements may be less rigorous for continuing members than for those to whom the partial wind-up applies; or
- The standard of materiality for reporting wind-up expenses may be less rigorous.

3320 Assumptions

.01 The actuary should select assumptions that:

- Are either best estimate assumptions or are best estimate assumptions modified to incorporate margins for adverse deviations to the extent, if any, required by law or by the terms of an appropriate engagement;
- Are selected as at the cut-off date; and
- Reflect the expected method of benefit settlement. [Effective February 1, 2018]

.02 Unless it is expected that expenses will not be paid from the pension plan's assets, the actuary should select an explicit assumption regarding the expenses of wind-up and either offset the resulting expense provision against the pension plan's assets or add the resulting expense provision to the pension plan's liabilities. [Effective December 31, 2010]

3330 Reporting: External User Report

.01 If a previous external user report was prepared with respect to the wind-up, the actuary should describe and quantify the gains and losses between the prior calculation date and the calculation date. [Effective December 30, 2012]

.02 An external user report should:

- Include the wind-up date, the calculation date, the cut-off date, and the report date;
- Describe the events precipitating the wind-up, of which the actuary is aware, that affect the terms of the wind-up, the benefit entitlements, or the valuation results;
- Describe the sources of membership data, plan provisions, and the pension plan's assets, and the dates at which they were compiled;
- Describe the membership data, including any assumptions made about missing membership data;
- Describe the tests applied to determine the sufficiency and reliability of the membership data and plan asset data for purposes of the work;
- Subject to any applicable privacy legislation:
  - Include the detailed individual membership data; or
  - Include an offer to provide detailed individual membership data on request to the employer, the plan administrator, or the regulator;
- Describe the liquidation value of the assets and a summary of the assets by major category;
- Describe the pension plan's provisions, including an identification of
  - Any benefits that have been insured;
  - Any amendments made since any previous external user report with respect to the plan which affect benefit entitlements; and
  - Any subsequent events or post-wind-up contingencies, of which the actuary is aware, which affect benefit entitlements;
- Report the explicit assumption regarding the expenses of wind-up or justify the expectation that expenses will not be paid from the pension plan's assets;

- Report the funded status at the calculation date;
- Disclose subsequent events of which the actuary is aware, whether or not the events are taken into account in the work and, if there are no subsequent events of which the actuary is aware, include a statement to that effect;
- State that the funded status at settlement may differ from that contained in the report unless the report includes the funded status at the time of final settlement;
- State whether an updated report will be required in the future;
- If the actuary relies upon direction concerning unclear or contentious issues,
  - Describe each such issue;
  - Describe the direction relied upon or, where appropriate, a summary thereof; and
  - Identify the person providing such direction and the basis of authority of such person;
- Describe any post-wind-up contingencies that may affect the distribution of the pension plan's assets;
- Describe whether a recalculation of the value of benefit entitlements is required at settlement;
- Where a member has a choice that the member has not yet made between receiving a commuted value and a deferred or immediate pension, describe the assumptions made regarding such choice;
- If applicable, describe the method to allocate the pension plan's assets among classes of members and the method to distribute surplus;
- Describe the actuary's role in calculating commuted values, the standards for their calculation, and an opinion on whether their calculation is in accordance with accepted actuarial practice in Canada; and
- Describe the sensitivity of the valuation results to the pension plan's investment policy and to market conditions between the report date and the settlement date. [Effective March 31, 2015]

.03 An external user report should provide the following four statements of opinion, all in the same section of the report and in the following order:

- A statement regarding membership data, which should usually be, "In my opinion, the membership data on which the valuation is based are sufficient and reliable for the purpose of the valuation.";
- A statement regarding assumptions, which should usually be, "In my opinion, the assumptions are appropriate for the purpose(s) of the valuation(s).";
- A statement regarding methods, which should usually be, "In my opinion, the methods employed in the valuation are appropriate for the purpose(s) of the valuation(s)."; and
- A statement regarding conformity, which should be, "This report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada." [Effective December 30, 2012]

.04 The external user report should be sufficiently detailed to enable another actuary to assess the reasonableness of the valuation. [Effective December 30, 2012]

Dates

.05 The wind-up date of the pension plan would be determined by the regulator, the plan administrator or the plan sponsor based on the plan provisions and the law.

.06 The calculation date of the funded status would usually be the wind-up date.

.07 For a particular member:

- The date of calculation of benefit entitlement would depend on the circumstances of the wind-up, the terms of the pension plan, and the law, and may be the date of termination of employment, the date of termination of membership, the wind-up date, or another date; and
- The settlement date would be the date of settlement of the member's benefit entitlement.

Nature of wind-ups

.08 The purpose of a wind-up valuation may be to determine, or to provide, the basis for determining:

- The funded status of the pension plan;
- The total value of the benefit entitlements of all members prior to taking account of the funded status of the pension plan;
- Any required additional funding;
- The amounts and methods of settlement of benefit entitlements, including any adjustment required due to a wind-up deficit; or
- The amount and method of distribution of a wind-up surplus.

.09 A wind-up may be complex and may take a long time. Delays may require a series of reports by the actuary. Since the funded status of the pension plan at the final settlement date may affect whether benefit entitlements can be settled in full, the reflection of subsequent events in each report would be critical.

.10 For example, between the wind-up date and the settlement date:

- The wind-up liabilities may fluctuate if there are fluctuations in interest rates and annuity prices;
- The pension plan's assets may fluctuate depending upon the manner in which they are invested; and
- The surplus may fluctuate if the pension plan's assets and liabilities are not matched.

.11 The actuary would usually report the value of the benefit entitlements of all members and the funded status of the pension plan. That report would be filed with the regulator for approval. After that approval, the plan administrator would settle the benefit entitlements.

.12 The actuary may prepare, or may be required to prepare, a final report after settlement of all benefit entitlements. Such report, if any, would document the distribution of the pension plan's assets by describing those entitlements and their settlement.

Membership data

.13 The membership data are the responsibility of the plan administrator. The actuary would, however, report on the sufficiency and reliability of the membership data, specifically including the commuted values used in the valuation whether or not the plan administrator was the calculator thereof.

.14 The finality of wind-up would call for the actuary to obtain precise membership data. The actuary may, if the circumstances dictate, include contingency reserves in the wind-up valuation with respect to missing members if the actuary believes that additional members still have benefit entitlements under the pension plan but their membership information is missing.

.15 The reported membership data would include details of the amounts and terms of payment of each member's benefits.

Assumptions

.16 The selected assumptions would:

- In respect of benefit entitlements that are assumed to be settled by purchase of annuities, reflect single premium annuity rates;
- In respect of benefit entitlements that are assumed to be settled by lump sum transfer, reflect the standards in section 3500 respecting commuted values; and
- In respect of benefit entitlements that are assumed to be settled in some other manner, reflect the manner in which such benefits would be settled.

.17 If future benefits depend on continued employment (e.g., the pension plan is terminating but employment is not), the actuary would consider reflecting contingencies such as future salary increases and termination of employment.

.18 If the pension plan provides special early retirement allowances that may be reduced if the members have employment income following their actual or assumed early retirement dates, then the wind-up valuation would require assumptions regarding the likelihood and the amounts of the members' future employment income. To extrapolate the pension plan's historical experience as a going concern would not necessarily be appropriate in selecting those assumptions.

.19 Wind-up expenses usually include, but are not limited to:

- Fees related to the actuarial wind-up report;
- Fees imposed by a regulator;
- Legal fees;
- Administration expenses; and
- Custodial and investment management expenses.

.20 The actuary would either net wind-up expenses against the pension plan's assets or add the assumed wind-up expenses to the pension plan's liabilities in calculating the ratio of assets to liabilities as a measure of financial security of the benefit entitlements, unless the expectation is that expenses will not be paid from the pension plan's assets. However, an exception may be made for future custodial and investment management expenses, which may be netted against future investment return in the treatment of subsequent events.

Use of another person's work

.21 Some aspects of the wind-up may be unclear to the actuary or contentious. Examples are:

- Interpretation of the law;
- The determination of the wind-up date;
- The members, former members or recently terminated members to be included in the wind-up;
- Whether or not to assume salary increases in determining benefit entitlements;
- Eligibility for plant closure benefits and permanent lay-off benefits;
- Eligibility for benefits payable only with the consent of the employer or plan administrator;
- The liquidation value of the pension plan's assets;
- The method to allocate the pension plan's assets among members;
- The allocation of surplus between the employer and the members; and
- Whether or not wind-up expenses are to be paid from the pension plan's assets.

.22 To decide those aspects, the actuary may rely upon direction from another person with the necessary knowledge, such as legal counsel or the employer, or the necessary authority, such as a regulator or the plan administrator. The actuary would consider any issues of confidentiality or privilege that may arise.

Post-wind-up contingencies

.23 Post-wind-up contingencies may affect benefit entitlements. Examples are:

- Member election of optional forms of benefits;
- Member election of retirement date;
- Salary increases; and
- Change in marital status.

Subsequent events

.24 In contrast with a going concern valuation, in a wind-up valuation all subsequent events, ideally, would be reflected. This ensures that the funded status is presented as fairly as possible as of the report date. However, it would be impossible to recognize subsequent events right up to the report date. Accordingly, the actuary would select a cut-off date that is close to the report date.

.25 The actuary would ascertain that no subsequent events have occurred between the cut-off date and the report date that would change the funded status significantly, otherwise the actuary would select a later cut-off date. For clarity, a subsequent event may be material yet not be so significant as to require selection of a later cut-off date.

.26 It may be appropriate to have more than one cut-off date. For example, the actuary may select one cut-off date for the active membership data and another cut-off date for the inactive membership data.

.27 Common subsequent events are:

- Contributions;
- Expenses paid from the pension plan’s assets;
- Actual investment return on the pension plan’s assets;
- Change in annuity purchase rates;
- Change in assumptions for the calculation of commuted values;
- Corrections to the membership data;
- Deaths of members; and
- Crystallization of post-wind-up contingencies.

.28 One method for taking account of subsequent events is to determine the value of benefits as of the cut-off date and then discount such value back to the calculation date at an interest rate equal to the rate of investment return, net of investment expenses, earned on the pension plan’s assets between the calculation date and the cut-off date. The pension plan’s assets would be determined at the calculation date, but adjusted for the subsequent events (such as contributions and non-investment expenses) that affect the pension plan’s assets.

.29 There may be situations where, due to legal or practical considerations, subsequent events are not recognized, at least in a preliminary report and the cut-off date for such a report would be the calculation date. In such reports, the effect of subsequent events may be disclosed and quantified in an approximate manner. Where the effect of subsequent events is provided in a later report, it may be practical, in that report, to use a calculation date corresponding to the cut-off date.

Statements of opinion

.30 Where different statements of opinion apply in respect of different purposes of the valuation, the above requirements may be modified, but would be followed to the extent practicable.

3400 Financial Reporting of Pension Costs

.01 This section 3400 applies to advice that an actuary provides with respect to financial reporting of a pension plan's costs and obligations in the employer's or the pension plan's financial statements, where the calculations and advice are provided in accordance with an applicable financial reporting standard.

3410 General

.01 For financial reporting purposes, the actuary should use methods and assumptions for the value of assets and pension benefit obligations that are appropriate to the basis of financial reporting in the employer's or pension plan's financial statements, as applicable, and that are consistent with the terms of an appropriate engagement and the circumstances affecting the work. [Effective May 1, 2019]

Circumstances affecting the work

.01.1 For the purposes of section 3400, the circumstances affecting the work would include

- The terms of the appropriate engagement under which the work is being performed; and
- The application of the law to the work.

.02 The actuary would reflect the financial reporting standards specified by the terms of the appropriate engagement. Where financial reporting standards require methods and assumptions to be established by the preparers of the financial statements, the actuary would use the methods and assumptions specified by the preparers of the financial statements.

Plan provisions

.02.1 The actuary would determine the plan provisions with sufficient accuracy for the purposes of the valuation. Sources of information on plan provisions include, where relevant

- Current plan documents;
- Administrative practices;
- Cost-sharing arrangements; and
- Communication between the plan sponsor or plan administrator and the plan members or collective bargaining agent.

.02.2 The actuary would consider all benefits in accordance with the terms of the appropriate engagement that are to be payable under the pension plan and would include provision for all such benefits expected to be paid under the plan.

Anticipated amendment or deferred recognition of a pending amendment

.02.3 The actuary's advice on a pension plan may reflect an expected amendment to the plan if the amendment is definitive or virtually definitive, as appropriate, based on the applicable financial reporting standard.

.02.4 The effective date of the amendment is the date at which the amended benefits take effect, as opposed to the date when the amendment becomes either definitive or virtually definitive.

.02.5 If an actuary is aware of an expected amendment to the pension plan, but does not reflect the amendment in the work, then the actuary would report the event in accordance with the requirements for the disclosure of subsequent events.

Data

.02.6 In identifying the data need, the actuary would bear in mind the pertinent benefits (i.e., those applicable during retirement, disability, or following termination of employment).

.02.7 The actuary may use data, including membership data, with an effective date different from the calculation date. In extrapolating data or results, the actuary would consider actual benefit payments and other relevant events between the effective date of the data and the calculation date. The actuary would not normally extrapolate membership data more than three years from the effective date of the membership data.

Assumptions

.03 The assumptions that the actuary uses would be best estimate assumptions, unless otherwise specified in the relevant financial reporting standards or as otherwise selected by the preparers of the financial statements.

.04 Repealed

Benefit commitments

.05 The actuary would include in the valuation of pension benefit obligations the effect of a commitment to provide benefits beyond the terms of the plan to the extent stipulated by the preparers of the financial statements.

Expenses

.05.1 The actuary's advice on a pension plan would take account of expenses, including whether or not they are expected to be paid from the pension plan's assets, if any.

Extrapolations

.05.2 The actuary may extrapolate results of an earlier valuation using appropriate extrapolation techniques. The actuary would not normally extrapolate valuation results more than four years from the effective date of the membership data.

3420 Reporting: External User Report

.01 An external user report should:

- Include the calculation date and the report date;
- Describe the sources of membership data, plan provisions, and the pension plan's assets, and the dates at which they were compiled;
- Describe the membership data and any limitations thereof, and any assumptions made about missing or incomplete membership data;
- Describe the tests applied to determine the sufficiency and reliability of the membership data and plan asset data for purposes of the work;
- Describe the market value of assets and a summary of the assets by major category;
- Describe the pension plan's provisions;
- Describe any material accounting policies relevant to the work;
- Describe any commitment to provide benefits beyond the terms of the plan reflected in the valuation of pension obligations;
- Report the funded status at the calculation date and the applicable service cost;
- Disclose any pending but definitive or virtually definitive amendment of which the actuary is aware, and whether or not such amendment has been included in determining the funded status and the service cost;
- Disclose subsequent events of which the actuary is aware, whether or not the events are taken into account in the work, and, if there are no subsequent events of which the actuary is aware, include a statement to that effect;
- Describe any contingent benefits provided under the pension plan and the extent to which such contingent benefits are included or excluded in determining the funded status and the service cost;
- Describe any benefits that are not contingent benefits and that have been excluded in determining the funded status and the service cost;
- Describe the method and period selected in connection with any amortizations;

- If the valuation is an extrapolation of an earlier valuation, then describe the method and any assumptions for, and the period of, the extrapolation; and

- State whether or not the valuation and/or extrapolation conforms with the actuary's understanding of the financial reporting standards specified by the terms of an appropriate engagement. [Effective May 1, 2019]

.02 An external user report should provide the following four statements of opinion, all in the same section of the report and in the following order:

- A statement regarding membership data, which should usually be, "In my opinion, the membership data on which the valuation is based are sufficient and reliable for the purpose of the valuation.";
- A statement regarding assumptions which should usually be, "In my opinion, the assumptions are appropriate for purposes of the valuation.";
- A statement regarding calculations, which should usually be, "In my opinion, the calculations have been made in accordance with my understanding of the requirements of [name financial reporting standard]"; and
- A statement regarding conformity, which should be, "This report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada." [Effective March 31, 2015]

.03 An external user report should be sufficiently detailed to enable another actuary to assess the reasonableness of the valuation. [Effective December 30, 2012]

Membership data

.04 Any assumptions and methods used in respect of insufficient or unreliable membership data would be described.

.05 **Reference to report on funding**

The descriptions required in the external user report may be incorporated by reference to an external user report on funding.

3500 Pension Commuted Values

3510 Scope

.01 The standards in this section 3500 apply to an actuary's advice on the computation of commuted values, including commuted values to be paid from a pension plan that is registered under an Act when the method of settlement is a lump sum payment in lieu of an immediate or deferred pension resulting from death or individual termination of plan membership except for the specific circumstances that are described below in paragraph 3510.03. In particular, the standards in this section 3500 apply:

- In a jurisdiction whether or not there is legislation in that jurisdiction that specifically provides for portability of pension benefit credits;
- Regardless of limits imposed by the Income Tax Act (Canada) on amounts that may be transferred to other tax-sheltered retirement plans; and
- Under a reciprocal pension agreement between plan sponsors where the result of the reciprocal agreement is either to establish a pension amount determined on a defined contribution basis or to establish an account balance under a defined contribution provision of a plan, whether the account balance is to be converted immediately or subsequently into a pension.

.02 The standards in this section 3500 also apply to the determination of a lump sum payment from the pension plan in lieu of an immediate or deferred pension to which a plan member's former spouse is entitled after a division of the member's pension on marital breakdown.

.03 The standards in this section 3500 do not apply:

- Under a reciprocal pension agreement between plan sponsors where the result of the reciprocal agreement is to provide defined pension benefits for the plan member;
- To the determination of commuted values of pensions and deferred pensions payable from pension arrangements that are not registered under an Act;
- To the conversion of defined pension benefits to a defined contribution arrangement where there is no termination of active employment;
- To the determination of commuted values of pensions that have commenced payment and where commutation is at the discretion of the member, except as explicitly required under paragraphs 3510.02 or 3560.01; or
- When calculating the capitalized value of pension benefits for actuarial evidence purposes, pursuant to part 4000, where such value does not relate to a commuted value payable from a registered pension plan.

Act

.04 For the purposes of this section 3500, “Act” means a pension benefits standards act of a province or the federal government of Canada or the Income Tax Act (Canada).

Retirement Compensation Arrangements

.05 Since Retirement Compensation Arrangements (RCAs) are not required to be registered under the Income Tax Act (Canada), this section 3500 applies to commuted values payable from an RCA only if the RCA is registered under a pension benefits standards act of a province or the federal government of Canada.

3520 Method

.01 The commuted value should be independent of the funded status of the pension plan at the valuation date. [Effective April 1, 2009]

.02 The actuary should establish the period for which the commuted value applies before recomputation is required, taking into account the requirements of applicable legislation and the plan rules. Commuted values paid after the end of such period should be recomputed on the basis of a new valuation date. [Effective April 1, 2009]

.03 The commuted value should be adjusted for a reasonable rate of interest, taking into account the requirements of applicable legislation, between the valuation date and the first of the month in which the payment is made. [Effective April 1, 2009]

.04 The commuted value should reflect the plan member’s full benefit entitlement as a deferred or immediate pensioner, as may be applicable, determined under the terms of the pension plan. In the case of a deferred pensioner, the commuted value should include the value of the death benefit that would have applied before commencement of the deferred pension. [Effective April 1, 2009]

.05 The actuary should not calculate a commuted value using methods or assumptions that produce a commuted value smaller than the value computed in accordance with this section 3500. [Effective April 1, 2009]

Valuation date

.06 The valuation date means the date as of which a value is being computed. Generally, this would be the date upon which the plan member becomes entitled to an immediate or deferred pension resulting from death or individual termination of plan membership, or as of such other date as may be determined either by legislation, by the plan rules, or by a plan administrator who is empowered to do so, on which the right to receive a commuted value becomes effective.

.07 In the event that recomputation is required in accordance with these standards, the actuary would establish a new valuation date. The actuary would make calculations at the new valuation date in accordance with the standards in effect on the new valuation date.

Conditions attached to payment

.08 Applicable legislation or the plan provisions may attach conditions to the payment of a portion of the commuted value when the plan is less than fully funded on a plan termination basis.

Benefit entitlement

.09 Where, at the valuation date, a plan member has the right as a deferred or immediate pensioner, as may be applicable, to optional forms of pension or optional commencement dates, and where such right is contingent on an action that is within the member's control and where it is reasonable to assume that the member will act so as to maximize the value of the benefit, the option that has the greatest value would be used in the determination of the commuted value. For example, where a member has terminated employment and, upon application, is eligible for a particular benefit that has a value, it is reasonable to assume that, upon acquiring expert advice, the member will apply for the benefit.

.10 However, where such right is contingent upon an action that is within the member's control and where it is not reasonable to assume that the member will act so as to maximize the value of the benefit, an appropriate allowance would be made for the likelihood and timing of such action. For example, where a member is continuing in employment and is entitled to an unreduced pension that commences upon termination of employment, it may not be reasonable to assume that the member will immediately terminate employment in order to maximize the value of the benefit. In determining the likelihood and timing of such action, the actuary may use group data, and the actuary would be prepared to justify the allowance that has been made.

.11 The commuted value determined by the actuary using these assumptions made in accordance with the preceding paragraphs 3520.09 and 3520.10 may prove to have recognized certain potential entitlements that are never realized, or may prove to have disregarded certain entitlements that ultimately provide value.

Alternative methods and assumptions

.12 The actuary may calculate a commuted value on methods and assumptions that differ from those prescribed in these standards only if:

- The resulting value is larger; and
- Such value is required by the plan terms or applicable legislation, or by a plan administrator who is empowered to specify the basis on which commuted values are to be determined.

3530 Demographic Assumptions

.01 Except for situations specifically noted below, the actuary should assume:

- Separate mortality rates for male and female members; and
- Mortality rates in accordance with a mortality table promulgated from time to time by the Actuarial Standards Board for the purpose of these calculations. [Effective February 1, 2014]

.02 No adjustment should be made to reflect the health or smoker status of the member. [Effective February 1, 2014]

.03 The current age of the plan member should be used when valuing an immediate pension. [Effective February 1, 2014]

.04 If the plan provides a contingent benefit only to the person who is the plan member's spouse at the date of termination of membership, the actual age of the spouse, if any, should be used in the computation. If this information cannot be obtained, an appropriate proportion married and age difference between the plan member and spouse should be assumed. [Effective February 1, 2018]

.05 Where the plan provides a contingent benefit to a plan member's spouse and a change in the member's marital status after the valuation date is relevant to the determination of the commuted value, the actuary should make an appropriate assumption concerning the likelihood of there being an eligible spouse, and the age of that spouse, at the time of death. [Effective February 1, 2014]

.06 When valuing deferred pensions, including deferred pensions for a plan member who may also be entitled to an immediate pension, the normal retirement age should be used, except in the situation where the terminated plan member has the right to elect an earlier commencement date and the consequent early retirement pension exceeds the amount that is of actuarial equivalent value to the pension payable at normal retirement age. The retirement age should be determined in a manner consistent with paragraph 3520.09. [Effective February 1, 2018]

.07 The demographic assumptions would be the same for all types of immediate and deferred pensions.

Mortality

.08 The actuary would calculate commuted values that do not vary according to the sex of the plan member where the actuary is required to do so by applicable legislation or by the provisions of the plan or by the plan administrator if the administrator is so empowered by the provisions of the plan. In this case, the actuary would adopt a blended mortality approach by either developing a mortality table based on a combination of male and female mortality rates, or computing the commuted value as a weighted average of the commuted value based on male mortality rates and that based on female mortality rates. The relative proportions of males versus females would be appropriate for the particular plan.

.09 If the requirement that commuted values do not vary according to the sex of the plan member is legislated and applies only to benefits earned after a particular date or only to a subgroup of plan members, the actuary may extend the use of a blended mortality approach to commuted values of benefits earned prior to such date or to commuted values of benefits of all members.

3540 Economic Assumptions

.01 The actuary should select economic assumptions that vary depending on whether the pension is fully indexed, partially indexed or non-indexed. [Effective April 1, 2009]

.02 If the valuation date is on or before January 31, 2011, the actuary should select economic assumptions that depend on the reported rates for the applicable CANSIM series for the second calendar month preceding the month in which the valuation date falls. If the valuation date is on or after February 1, 2011, the actuary should select economic assumptions that depend on the reported rates for the applicable CANSIM series for the calendar month immediately preceding the month in which the valuation date falls. [Effective April 1, 2009]

.03 The actuary should calculate two interest rates, one applicable to the first 10 years after the valuation date and the second applicable to all years thereafter. [Effective April 1, 2009]

.04 The commuted value of a fully or partially indexed pension should be at least equal to the commuted value applicable to a non-indexed pension in the same amount and having similar characteristics. [Effective April 1, 2009]

.05 The actuary should determine from the CANSIM series the following three factors.

CANSIM Series	Description	Factor
V122542	Seven-year Government of Canada benchmark bond yield, annualized (final Wednesday of month)	i_7
V122544	Long-term Government of Canada benchmark bond yield, annualized (final Wednesday of month)	i_L
V122553	Long-term real-return Government of Canada bond yield, annualized (final Wednesday of month)	r_L

Note that the factors determined above are not the reported CANSIM series, but the annualized value of the reported figure. [Effective April 1, 2009]

.06 The actuary should also determine a fourth factor, calculated as:

$r_7 = r_L * (i_7 / i_L)$ [Effective April 1, 2009]

.07 The actuary should determine the interest rates from the following:

	Non-Indexed	Indexed
First 10 Years	$i_{1-10} = i_7 + 0.90\%$	$r_{1-10} = r_7 + 0.90\%$
After 10 Years	$i_{10+} = i_L + 0.5 * (i_L - i_7) + 0.90\%$	$r_{10+} = r_L + 0.5 * (r_L - r_7) + 0.90\%$

[Effective April 1, 2009]

.08 The actuary should calculate the commuted value of a non-indexed pension using a two-tier interest rate of:

i_{1-10} for the first 10 years and i_{10+} thereafter. [Effective April 1, 2009]

.09 The actuary should calculate the commuted value of a pension that is fully indexed to increases in the Consumer Price Index using a two-tier interest rate of:

r_{1-10} for the first 10 years and r_{10+} thereafter. [Effective April 1, 2009]

The UP-94 Table and Projection Scale AA were published in the Transactions of the Society of Actuaries, Volume XLVII (1995).

.10 For pensions that are partially indexed to increases in the Consumer Price Index, the actuary should determine the implied rates of increase in the Consumer Price Index in the first 10 years and thereafter that make the above assumptions for non-indexed and fully indexed pensions internally consistent. The actuary should then determine the rates of pension escalation that are produced by applying to those implied rates of increase in the Consumer Price Index the partial indexing formula of the plan. The actuary should determine the adjusted interest rates applicable to partially indexed pensions by appropriately reducing on a geometric basis the non-indexed rates of interest to reflect the rates of pension escalation. [Effective April 1, 2009]

.11 Where increases in pensions are related to increases in the average wage index, the actuary should assume that the average wage index will increase at rates that are one percentage point higher than the implied rates of increase in the Consumer Price Index. [Effective April 1, 2009]

.12 A pension that is indexed according to an excess interest approach involves increases that are linked to the excess of formula A over formula B, where A is some proportion of the rate of return on the pension fund or on a particular class of assets, and B is a base rate or some proportion of the rate of return on another asset class. In determining the interest rates under formula A and formula B, the actuary should use the interest rate applicable to a non-indexed pension as a proxy for the rate of return on the pension fund or on any particular asset class for which the rate of return is expected to be equal to or greater than the non-indexed interest rates determined in accordance with paragraph 3540.07. [Effective February 1, 2018]

.13 Prior to calculating the commuted value, the actuary should round the rates of interest determined in accordance with this subsection 3540 to the nearest multiple of 0.10%. The actuary should round only the interest rates to be used in the calculation of the commuted value. The actuary should not round any rates of interest, increase or escalation used in calculations prior to the final step of the determination. [Effective February 1, 2018]

Pension index frequency

.14 For an indexed pension, the actuary would apply the indexed interest rates as determined above without adjustment only if the frequency of indexing is equal to the payment frequency. Reasonable approximations may be used to calculate an adjustment that takes into account the specific circumstances of the situation regarding payment frequency, indexing frequency, and time and amount of the first increase.

Pension indexed on an excess interest formula

.15 If the pension is indexed on an excess interest formula and the particular asset class is one for which the rate of return is expected to be less than the non-indexed interest rates determined in accordance with paragraph 3540.07, the actuary would appropriately reduce the rate of interest to reflect the actuary's expectation of the difference between the non-indexed interest rates determined in accordance with paragraph 3540.07 and the rate of return on the particular asset class. In determining the expected rate of return on a particular asset class for this purpose, the actuary would be guided by the current economic environment as well as long-term historical experience.

Other modifications

.16 Where benefit adjustments are based on one of the above approaches but are either modified by applying a maximum or minimum annual increase, with or without carry forward of excesses or deficiencies to later years, or modified by prohibiting a decrease in a year where the application of the formula would otherwise cause a decrease in pension, the actuary would adjust the interest rates otherwise applicable, based on the likelihood of the modification causing a material change in the pension payable in any year. In determining such likelihood, the actuary would be guided by the current economic environment as well as long-term historical experience. The actuary would be prepared to justify any such adjustment or lack of adjustment to the interest rates.

.17 Where increases in benefits are not determined by reference to increases in the Consumer Price Index, the actuary would ensure that the commuted value is not inconsistent with the values of non-indexed pensions and fully indexed pensions.

Alternative calculation method

.18 For pensions that are either fully or partially indexed, rather than using the implicit approach described above, the commuted value may be determined explicitly by indexing each expected payment based on the indexing rate that makes the assumptions for non-indexed and fully indexed pensions, prior to rounding under paragraph 3540.13, internally consistent.

3550 Disclosure

.01 When communicating the amount of the commuted value of a member's pension, the actuary should provide:

- A description of the benefit entitlements involved;
- A description of the actuarial assumptions used in determining the commuted value and the rate of interest to be credited between the valuation date and the date of payment;
- A statement of the period for which the commuted value applies before recomputation is required;
- When the payment of a portion of the commuted value is subject to a condition based on the funded status of the plan, the additional contribution required for the payment of the full commuted value to be made or the recommended schedule for payment of the balance of the commuted value, if applicable; and
- A statement as to whether the commuted value has been computed in accordance with these standards. [Effective February 1, 2018]

.02 Where the commuted value has not been determined in accordance with these standards, the actuary should clearly state that the calculation is not in compliance with these standards and disclose all areas of noncompliance and the reasons for the noncompliance. [Effective April 1, 2009]

.03 When communicating to the plan administrator an actuarial basis to be used in determining commuted values, the actuary should provide a statement that the actuarial basis is in accordance with these standards. [Effective February 1, 2018]

Disclosure of plan values which differ from these standards

.04 In a situation where the use of commuted values (called plan values in this subsection 3550) that are different from those computed in accordance with this section 3500, is required by the plan terms or applicable legislation, or by a plan administrator who is empowered to specify the basis on which commuted values are to be determined, the following disclosure requirements are applicable:

- If the plan values are lower, the actuary should disclose that the commuted values so calculated are in accordance with the plan or the applicable legislation but not in accordance with the standards; or
- If the plan values are higher, the actuary should disclose that the commuted values so calculated are in accordance with the plan or the applicable legislation and the standards. [Effective February 1, 2018]

.05 Where the actuary is required to calculate commuted values that do not vary according to the sex of the plan member, and where that requirement applies only to benefits earned after a particular date or only to a subgroup of plan members, the actuary should describe the extent to which the actuary's blended mortality approach has been extended to benefits earned before the particular date or to benefits of all members. [Effective April 1, 2009]

.06 Where the actuary uses assumptions or methods described in these standards to calculate a commuted value in a situation where these standards does not apply, the actuary should not state or imply that the commuted value has been computed in accordance with these standards. [Effective February 1, 2018]

3560 Reduced Life Expectancy

.01 The standards in this subsection 3560 applies to an actuary's advice on the computation of commuted values, from a registered pension plan, where the right to receive the lump sum is based on subsection 51.1 of the regulations to the Ontario Pension Benefits Act. These standards may also be applicable in other directly comparable situations.

.02 These standards do not apply where the right to receive a lump sum is not conditional upon medical certification, under legislation or plan provisions, even if the former member is known to be terminally ill.

.03 All standards set out in preceding subsections of section 3500 apply, except as superseded by the following recommendations.

.04 The commuted value should be calculated as of the date of the medical certificate specifying that the former member has life expectancy less than two years, even if other conditions for payment of the benefit (such as spousal consent) are not met until a later date. [Effective April 1, 2009]

.05 The commuted value should be adjusted for interest and benefits paid to the date of payment. [Effective April 1, 2009]

.06 The computation should not be adjusted to reflect the actual death or change in health of the former member after the valuation date. However, if a former pension plan member becomes eligible for immediate commencement of a pension after the date of the medical certificate and prior to payment of the benefit, this eligibility should be reflected in the calculation. [Effective April 1, 2009]

.07 If the former member is entitled to a commuted value transfer based on plan provisions or legislation that is not conditional on reduced life expectancy, the amount payable should be the greater of the amount calculated in accordance with this subsection 3560 and the amount computed in accordance with subsections 3520 through 3540 without regard to shortened life expectancy. [Effective April 1, 2009]

Benefit Entitlement

.08 The commuted value would reflect the plan member's full benefit entitlement as a deferred or immediate pensioner, as may be applicable, determined under the terms of the pension plan.

There are three possible cases:

(a) a former member with deferred pension entitlement, not eligible for immediate commencement of pension.

In this case, the commuted value would reflect the present value of the death benefits that would be payable in respect of the former member. For this purpose, the value of the death benefit would be calculated as of the valuation date, assuming the former member died as of the valuation date.

(b) a former member with deferred pension entitlement, eligible for immediate commencement of pension.

In this case, the lump sum value would be the greater of the amount determined as in (a) above and a value determined as if the member had retired at the date of valuation and elected the most favourable combination of the highest surviving spouse pension permitted by the plan (if there is an eligible spouse) and the longest guaranteed period available under the plan. This value would be determined as for pensioners in (c) below.

(c) a former member in receipt of pension.

In this case, the commuted value would reflect the present value of pension payments for a period certain of four months from the valuation date, any additional guaranteed payments and any survivor benefits potentially payable.

Disclosure

.09 When communicating the amount of the commuted value of a member's pension, the actuary would also provide a description of the survival period assumption.