1000—General

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1100 Introduction

1110 Application

.01 These Standards of Practice apply to actuarial work in Canada. Responsibility for these Standards of Practice vests in the Actuarial Standards Board (Canada) and approval of standards and changes to standards are made through a process that includes consultation with the actuarial profession and other interested parties. They are intended for the benefit of the public. The work in Canada of a member of a professional actuarial organization is expected to conform to these Standards of Practice.

.02 The existence of standards is not a substitute for professional judgment or consideration for the needs of the user(s) when performing specific work.

.03 The authority of these Standards of Practice derives from the powers of those bodies that recognize them for actuarial work in Canada. Among others, these include professional actuarial bodies and relevant laws such as those regulating pensions and insurance. Compliance with these Standards of Practice is also likely to be taken into account when the quality of actuarial work is being considered in a court of law or in other contested situations. However, in such circumstances, deviation from any provision of these Standards of Practice should not, in and of itself, be presumed to be malpractice.

1120 Definitions

.01 Each term set over dotted underlining has the meaning given in this subsection. A term that is not set over dotted underlining has its ordinary meaning.

.02 Accepted actuarial practice is the manner of performing work in accordance with these Standards of Practice. Unless the context requires otherwise, it refers to work in Canada. [*pratique actuarielle reconnue*]

.03 Actuarial cost method is a method to allocate the present value of a benefit plan's obligations to time periods, usually in the form of a service cost and an accrued liability. [*méthode d'évaluation actuarielle*]

.04 Actuarial evidence work is work where the actuary provides an expert opinion with respect to any area of actuarial practice in the context of an actual or anticipated dispute resolution proceeding, where such expert opinion is expected or required to be independent. A dispute resolution proceeding may be a court or court-related process, a tribunal, a mediation, an arbitration, or a similar proceeding. Actuarial evidence work may include the determination of capitalized values in respect of an individual, or the provision of an expert opinion with respect to a dispute involving an actuarial practice area, such as pensions or insurance, or questions of professional negligence. [*travail d'expertise devant les tribunaux*]

.05 Actuarial present value method is a method to calculate the lump sum equivalent at a specified date of amounts payable or receivable at other dates as the aggregate of the present values of each of those amounts at the specified date, and taking into account both the time value of money and, where appropriate, contingent events. [*méthode de la valeur présente actuarielle*]

.06 Actuary, as it is used in these standards, means a member of a professional actuarial organization whose work in Canada is expected to conform to these standards. [*actuaire*]

.07 Anti-selection is the tendency of one party in a relationship to exercise options to the detriment of another party when it is to the first party's advantage to do so. [*antisélection*]

.08 Appointed actuary of an entity is an actuary formally appointed, pursuant to legislation, by the entity to monitor the financial condition of that entity. [*actuaire désigné*]

.09 Appropriate engagement is one that does not impair the actuary's ability to conform to the precepts of ethical and professional conduct such as those that may be found in the Rules of Professional Conduct of the Canadian Institute of Actuaries or relevant law or regulation. Unless the context otherwise requires, wherever the word "engagement" is used in these standards it refers to an appropriate engagement. [*mandat approprié*]

.10 Automatic balancing mechanisms automatically adjust contributions, benefits, and/or parameters of a plan in order to restore the balance between its source of financing and its benefits. The mechanism is prescribed by a set of predetermined measures to be taken, either immediately or later as prescribed, upon being triggered by certain demographic, economic, or financial indicators. [*mécanismes automatiques de compensation*]

.11 Benefits liabilities are the liabilities of a plan in respect of claims incurred on or before a calculation date. [*obligations liées aux prestations*]

.12 Best estimate means without bias. [*meilleure estimation*]

.13 Calculation date is the effective date of a calculation; e.g., the calculation date in the case of a valuation for financial statements. It usually differs from the report date. [*date de calcul*]

.14 Case estimate at a calculation date is the unpaid amount of one of, or a group of, an insurer's reported claims (perhaps including the amount of claim adjustment expenses), as estimated by a claims professional according to the information available at that date. [*évaluation du dossier*]

.15 Claim adjustment expenses are internal and external expenses in connection with settlement and administration of claims. [*frais de règlement des sinistres*]

.16 Claim liabilities are the portion of insurance contract liabilities in respect of claims incurred on or before the calculation date. [*passif des sinistres*]

.17 Contingent event is an event that may or may not happen, or that may happen in more than one way or that may happen at different times. [*éventualité*]

.18 Contribution is a contribution by a participating employer or a plan member to fund a benefit plan. [*cotisation*]

.19 Contribution principle is a principle of policyholder dividend determination whereby the amount deemed to be available for distribution to policyholders by the directors of a company is divided among policies in the same proportion as policies are considered to have contributed to that amount. [*principe de contribution*]

.20 Credibility is a measure of the predictive value attached to an estimate based on a particular body of data. [*crédibilité*]

.21 Credit spread, for a fixed-income asset, is the yield to maturity on that asset minus the yield to maturity on a risk-free fixed income asset with the same cash flow characteristics. [*écart de crédit*]

.22 Definitive refers to a matter that is final and permanent rather than tentative, provisional, or unsettled. [*décision définitive*]

.23 Development of data with respect to a given coverage period is the change in the value of those data from one calculation date to a later date. [*matérialisation*]

.24 Explanatory text is text that appears outside of a box in these standards. [*texte explicatif*]

.25 External user is a user other than the actuary's client or employer. Internal user and external user are mutually exclusive. [*utilisateur externe*]

.26 External user report is a report whose users include an external user. [*rapport destiné à un utilisateur externe*]

.27 Financial condition of an entity at a date refers to its prospective ability at that date to meet its future obligations, especially obligations to policyholders, members, and those to whom it owes benefits. Financial condition is sometimes called "future financial condition". [*santé financière*]

.28 Financial position of an entity at a date is its financial state as reflected by the amount, nature, and composition of its assets, liabilities, and equity at that date. [*situation financière*]

.29 To fund a plan is to dedicate assets to its future benefits and expenses. Similarly for "funded" and "funding". [*provisionner*]

.30 Funded status is the difference between the value of assets and the actuarial present value of benefits allocated to periods up to the calculation date by the actuarial cost method, based on a valuation of a pension plan, post-employment benefit plan, or social security program. [*niveau de provisionnement*]

.31 Going concern valuation is a valuation that assumes that the entity to which the valuation applies continues indefinitely beyond the calculation date. [*évaluation en continuité*]

.32 Indexed benefit is a benefit whose amount depends on the movement of an index such as the consumer price index. [*prestation indexée*]

.33 Indicated rate is the best estimate of the premium required to provide for the corresponding expected claims costs, expenses, and provision for profit. [*taux indiqué*]

.34 Insurance contract is a contract under which one party (the issuer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder. Insurance contract includes group insurance, third-party contracts where the owner of the contract and the person who is compensated (the policyholder) differ, and all like arrangements substantively in the nature of insurance. [*contrat d'assurance*]

.35 Insurance contract liabilities in an issuer's statement of financial position are the liabilities at the date of the statement of financial position on account of the issuer's insurance contracts, including commitments, that are in force at that date or that were in force before that date. [*passif des contrats d'assurance*]

.36 Insurer is a federally or provincially licensed insurance company that is an issuer of insurance contracts. Insurer includes a fraternal benefit society and the Canadian branch of a foreign insurer, but does not include a public personal injury compensation plan or a post-employment benefit plan[1]. [*assureur*]

.37 Internal user is the actuary's client or employer. Internal user and external user are mutually exclusive. [*utilisateur interne*]

.38 Internal user report is a report all of whose users are internal users. [*rapport destiné à un utilisateur interne*]

.39 Issuer is the party under an insurance contract that accepts significant insurance risk. [*émetteur*]

.40 Margin for adverse deviations is the difference between the assumption for a calculation and the corresponding best estimate assumption. [*marge pour écarts défavorables*]

.41 Model is a practical representation of relationships among entities or events using statistical, financial, economic, or mathematical concepts. A model uses methods, assumptions, and data that simplify a more complex system and produces results that are intended to provide useful information on that system. A model is composed of a model specification, a model implementation, and one or more model runs. Similarly for "to model". [*modèle*]

.42 Model implementation is one or more systems developed to perform the calculations for a model specification. For this purpose "systems" include computer programs, spreadsheets, and database programs. [*implémentation du modèle*]

.43 Model risk is the risk that, due to flaws or limitations in the model or in its use, the actuary or a user of the results of the model will draw an inappropriate conclusion from those results. [*risque de modélisation*]

.44 Model run is a set of inputs and the corresponding results produced by a model implementation. [*exécution d'un modèle*]

.45 Model specification is the description of the components of a model and the interrelationship of those components with each other, including the types of data, assumptions, methods, entities, and events. [*spécifications du modèle*]

.46 New standards means new standards, or amendment or rescission of existing standards. [*nouvelles normes*]

.47 Periodic report is a report that is repeated at regular intervals. [*rapport périodique*]

.48 Plan administrator is the person or entity with overall responsibility for the operation of a benefit plan. [*administrateur d'un régime*]

.49 Policy liabilities in an insurer's statement of financial position are the liabilities at the date of the statement of financial position on account of the insurer's policies, including commitments, that are in force at that date or that were in force before that date. Policy liabilities consist of insurance contract liabilities and liabilities for policy contracts other than insurance contracts. [*passif des polices*]

.50 Policyholder is a party that has a right to compensation under an insurance contract if an insured event occurs[1]. [*titulaire de police*]

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.51 Premium liabilities are the portions of insurance contract liabilities that are not claim liabilities. [*passif des primes*]

.52 Prescribed means prescribed by these standards. [*prescrit*]

.53 Property and casualty insurance is insurance that insures individuals or legal persons

- Having an interest in tangible or intangible property, for costs arising from loss of or damage to such property (e.g., fire, fidelity, marine hull, warranty, credit, legal expense, and title insurance); or
- For damages to others or costs arising from the actions of such persons (e.g., liability and surety bonds) and for costs arising from injury to such persons (e.g., automobile accident benefits insurance). [*assurances IARD*]

.54 Provision for adverse deviations is the difference between the actual result of a calculation and the corresponding result using best estimate assumptions. [*provision pour écarts défavorables*]

.55 Public personal injury compensation plan means a public plan

- Whose primary purpose is to provide benefits and compensation for personal injuries;
- Whose mandate may include health and safety objectives and other objectives ancillary to the provision of benefits and compensation for personal injuries; and
- That has no other substantive commitments.

The benefits and compensation provided under such public plans are defined by statute. In addition, such public plans have monopoly powers, require compulsory coverage except for those groups excepted by legislation or regulation, and have the authority to set assessment rates or premiums. [*régime public d'assurance pour préjudices corporels*]

.56 Recommendation means text that appears in a box in these standards. Similarly for "recommend". [*recommandation*]

.57 Related experience includes premiums, claims, exposures, expenses, and other relevant data for events analogous to the insured events under consideration other than the subject experience and may include established rate levels or rate differentials or external data. [*expérience connexe*]

.58 Report is an actuary's oral or written communication to users about his or her work. Similarly for "to report". [*rapport*]

.59 Report date is the date the actuary specifies as such in the report. It usually differs from the calculation date. [*date du rapport*]

.60 Scenario is a set of consistent assumptions. [*scénario*]

.61 Service cost is that portion of the present value of a plan's obligations that an actuarial cost method allocates to a time period, excluding any amount for that period in respect of unfunded accrued liabilities. [*cotisation d'exercice*]

.62 Social security program means a program with all the following attributes regardless of how it is financed and administered:

- Coverage is of a broad segment, or all, of the population, often on a compulsory or automatic basis;
- Benefits are provided to, or on behalf of, individuals;
- The program, including benefits and financing method, is mandated by law;
- The program is not financed through private insurance; and
- Program benefits are principally provided or delivered in the form of periodic payments upon old age, retirement, death, disability, and/or survivorship. [*programme de sécurité sociale*]

.63 Subject experience includes premiums, claims, exposures, expenses, and other data for the insurance categories under consideration. [*expérience visée*]

.64 Subsequent event is an event of which an actuary first becomes aware after a calculation date but before the corresponding report date. [*événement subséquent*]

.65 Trend is the tendency of data values to change in a general direction from one coverage period to a later coverage period. [*tendance*]

.66 User means an intended user of the actuary's work. [*utilisateur*]

.67 Virtually definitive refers to a matter that is almost certain, but that lacks one or more formalities like ratification, due diligence, regulatory approval, third reading, royal assent, or proclamation. However, a decision that still involves discretion at an executive or administrative level is not virtually definitive. [*pratiquement définitive*]

.68 Work means work that is commonly, but not necessarily exclusively, performed by actuaries in assessing, measuring, and evaluating risks and contingencies and usually includes

- Acquisition of knowledge of the circumstances affecting the work that the actuary is undertaking;
- Obtaining sufficient and reliable data;
- Selection of assumptions and methods;
- Calculations and examination of the reasonableness of their result;
- Use of other persons' work;
- Formulation of opinion and advice;
- Reporting; and
- Documentation. [*travail*]

1130 Interpretation

Recommendations

.01 These standards consist of recommendations and explanatory text.

.02 A recommendation is the highest order of guidance in these standards.

.03 Each recommendation is in boxed text where it is accompanied by its effective date, shown in square brackets.

Explanatory text

.04 The explanatory text supports and expands upon the recommendations. The explanatory text consists of definitions, explanations, examples, and useful practices.

Effective date of recommendations

.05 The notice of adoption for new standards would indicate their effective date and whether early implementation is permitted and may provide additional direction regarding the application of new standards.

.06 Subject to the notice of adoption, a recommendation applies to work with a calculation date that is on or after the recommendation's effective date. Superseded recommendations that were in effect at the calculation date would apply to work with a calculation date prior to the effective date of new standards unless early implementation is permitted and applied to the work.

General standards and practice-specific standards

.07 These standards consist of general standards and practice-specific standards. With the exception noted below, the general standards apply to all areas of actuarial practice. In addition, the standards in part 4000 apply to all areas of actuarial practice if the actuary's work in an area meets the definition of actuarial evidence work.

.08 Usually, the intent of the practice-specific standards is to narrow the range of practice considered acceptable under the general standards.

.09 In exceptional cases, however, the intent of practice-specific standards is to define as acceptable a practice that would not be acceptable under the general standards, in which case that intent is specifically noted by words in a practice-specific recommendation like: "*Notwithstanding the general standards, the actuary should…*", followed by the explanatory text.

Drafting

.10 "Should" is the strongest mandating word in these standards, appearing only in recommendations, often in the expression, "The actuary should…"

.11 "Would" is a suggestive word appearing in the explanatory text, often in the expression, "The actuary would…", and is less forceful than the mandative "should".

.12 "May" is a permissive word, appearing in both recommendations and the explanatory text, often in the expression, "The actuary may…" and often with conditions attached. It defines a safe harbour. For example, in paragraph 1510.01, the recommendation is that "The actuary may use and take responsibility for another person's work if such actions are justified." and the explanatory text describes steps that constitute justification. The actuary who is satisfied that the actions are justified has done all that may be reasonably expected and has therefore complied with accepted actuarial practice, even if the use turns out not to be well-founded.

.13 The examples are often simplified and are not all-inclusive.

1140 Judgment

.01 The actuary should exercise reasonable judgment in applying these standards. A judgment is reasonable if it is objective and takes account of

- The spirit and intent of the standards;
- Precepts of ethical and professional conduct intended to guide the conduct of the actuary;
- Common sense; and
- Constraints on time and resources. [Effective February 1, 2018]

Need for judgment

.02 While these standards are drafted so that they are, as much as possible, understandable by lay persons, the judgment of the actuary is necessary for their application.

.03 The exercise of judgment is not clear-cut, except perhaps in hindsight. A judgment that is reasonable at its making is not made unreasonable by later hindsight.

.04 A judgment that is completely subjective would not be reasonable even though it may be based on honest belief. A reasonable judgment would be objective and demonstrably take account of the criteria listed in the recommendation and discussed below.

.05 There is a reasonable range of assumptions that may be selected by an actuary for particular work and that might produce materially different results. Sometimes, it is desirable that actuaries produce results within a relatively narrow range, in which case the practice-specific standards may prescribe certain assumptions and/or methods to achieve that purpose.

Spirit and intent

.06 In applying a specific standard, it is important to be guided by the spirit and intent behind it.

Common sense

.07 A strained interpretation of a recommendation is inappropriate.

.08 An outlandish result or a seeming impossibility of applying the standards would indicate either a misinterpretation of the standards or their inapplicability to the situation.

Constraint on time and resources

.09 The actuary would normally perform work in compliance with accepted actuarial practice. However in some circumstances within the scope of an appropriate engagement, the actuary's work may be constrained by available time and resources. In such circumstances, the actuary would adopt an interpretation and application that strikes a reasonable balance between compliance and modifications due to the constraints, after consideration of accepted actuarial practice with respect to materiality and the use of approximations. The actuary would report to the user any deviation from accepted actuarial practice.

1150 Accepted actuarial practice

.01 Work in Canada should conform to accepted actuarial practice except when it conflicts with law or the terms of an appropriate engagement. A user of the actuary's work may assume that it is in accordance with accepted actuarial practice except when the actuary reports otherwise. [Effective February 1, 2018]

.02 These standards are the only explicit articulation of accepted actuarial practice for work in Canada. Explanation, examples, and other useful guidance may also be found in

- New standards, not yet effective but whose early implementation is appropriate;
- Educational notes of the Canadian Institute of Actuaries;
- Actuarial principles;
- Exposure drafts;
- Historical records;
- Canadian and international actuarial literature; and
- Practices that are generally accepted among actuaries and that are not in conflict with these standards.

The applicability and the relative importance of this other guidance for particular work is a matter for judgment.

.03 Accepted actuarial practice is sometimes called "generally accepted actuarial practice" (for example, in the Insurance Companies Act (Canada)) or "generally accepted actuarial principles".

1160 Scope

.01 These standards apply to work in Canada. [Effective February 1, 2018]

.02 The application of any recommendations beyond their scope should take account of relevant circumstances. [Effective February 1, 2018]

Work in Canada vs. work in another country

.03 The distinction between work in Canada and work in another country depends primarily on the ultimate purpose of the work. It does not depend on where the actuary lives or where the actuary happens to be when doing the work.

.04 Work in compliance with the laws or customs of a country or a particular region within that country is work in that country. Examples include

- A valuation of the liabilities of a pension plan of a Canadian subsidiary of a U.S. multinational for the consolidated financial statements of the multinational is work in the U.S.
- If the work relates to taxation under the U.S. *Internal Revenue Code*, the work is work in the U.S. Thus, a valuation of the policy liabilities of the U.S. branch of a Canadian insurer for the insurer's U.S. income tax return is work in the U.S.
- If the work relates to litigation under U.S. law before a U.S. court, the work is work in the U.S. Thus, a report to the lawyer of a Canadian defendant insured by a Canadian insurer on a claim for damages litigated under U.S. law in a U.S. court is work in the U.S.

.05 There may be cases when the distinction is not clear; for example, advice to a Canadian insurer on products to be sold outside Canada. In some of those cases, accepted actuarial practice may be the same in both countries, so the distinction does not matter. If the distinction matters, the actuary would, if practical, agree with the user and report on the appropriate practice and, failing agreement, would report the implications of the distinction.

Work outside Canada

.06 The best guidance for work in another country is the accepted practice for actuarial work in that country. This encompasses the formal guidance that the actuarial profession in that country provides for work in that country. If that guidance does not exist or is limited, these standards may provide useful guidance. The general standards are more likely to provide useful guidance than the practice-specific standards: in either case, however, the actuary would take account of differences between the laws and customs of the other country and those of Canada.

1200 Permitted Deviations

1210 Conflict with law

.01 If accepted actuarial practice conflicts with the law, the actuary should comply with the law, but should report the conflict and, if practical, useful, and appropriate under the terms of the engagement, report the result of applying accepted actuarial practice. [Effective February 1, 2018]

.02 It is practical to report the result of applying accepted actuarial practice unless the work to do so is onerous or the needed data are unobtainable. If a quantified result is not practical, a verbal description of the result is better than no report.

.03 Description of the conflict and disclosure of its effect is useful in order to

- Disclose that the work deviates from accepted actuarial practice;
- Disclose that the work, insofar as the conflict is concerned, is in accordance with the requirements of the legislator or regulator, which vary by jurisdiction, rather than accepted actuarial practice, which is uniform across Canada; and
- Promote eventual adoption of accepted actuarial practice into law.

In determining the usefulness of reporting, the actuary would take into account the needs of the various users.

.04 Accepted actuarial practice does not conflict with the law where the law mandates a practice, or limits practice to a range, that is within the range of accepted actuarial practice.

1220 Conflict with terms of engagement

.01 If accepted actuarial practice conflicts with the terms of an appropriate engagement, the actuary may comply with the terms of that engagement, but should report the conflict and, if practical, useful, and appropriate under the terms of that engagement, report the result of applying accepted actuarial practice. [Effective February 1, 2018]

.02 Usually, the actuary is responsible for all aspects of his or her work and performs it in accordance with accepted actuarial practice. The engagement to which the recommendation applies is usually one in which one or more aspects of work are omitted or are stipulated by the client or employer or the terms of a benefit plan. Examples include situations where

- The actuary uses, but does not take responsibility for, the software system, or the work, of the staff of the client or employer; and
- The client or employer or the terms of a benefits plan stipulates an assumption or a method that is not in accordance with accepted actuarial practice.

.03 Conflict between accepted actuarial practice and the law is not the same as conflict between accepted actuarial practice and the terms of an engagement. In the case of an engagement whose terms call for deviation from accepted actuarial practice, the actuary has discretion to accept or not to accept the engagement.

.04 The practicality and usefulness of reporting a result in accordance with accepted actuarial practice are the same as for subsection 1210, Conflict with law.

1230 Unusual and unforeseen situations

.01 Deviation from a particular recommendation or other guidance in these standards is accepted actuarial practice for an unusual or unforeseen situation for which the standards are inappropriate[2]. [Effective February 1, 2018]

.02 The actuary would report without reservation when deviating from a particular recommendation or other guidance in these standards in accordance with this subsection 1230, but it may sometimes be appropriate to describe and justify the deviation in the report.

1240 Materiality

.01 Deviation from a particular recommendation or explanatory text in these standards is accepted actuarial practice if the effect of so doing is not material. [Effective February 1, 2018]

[2] Actuaries are encouraged to bring such situations to the attention of the Actuarial Standards Board, who may wish to consider how standards might be improved so that they do contemplate such situations.

.02 "Material" has its ordinary meaning, but is judged from the point of view of a user, having regard for the purpose of the work. Thus, an omission, understatement, or overstatement is material if the actuary expects it to affect either the user's decision-making or the user's reasonable expectations. When the user does not specify a standard of materiality, judgment falls to the actuary. That judgment may be difficult for one or more of these reasons:

- The standard of materiality depends on how the user uses the actuary's work, which the actuary may be unable to foresee. If practical, the actuary would discuss the standard of materiality with the user. Alternatively, the actuary would report the purpose of the work as precisely as possible, so that the user is warned of the risk of using the work for a different purpose with a more rigorous standard of materiality.
- The standard of materiality may vary among users. The actuary would choose the most rigorous standard of materiality among the users.
- The standard of materiality may vary among uses. For example, the same accounting calculations may be used for a pension plan's financial statements and the financial statements of its participating employer. The actuary would choose the more rigorous standard of materiality between those two uses.
- The standard of materiality depends on the user's reasonable expectations, consistent with the purpose of the work. For example, advice on winding-up a pension plan may affect each participant's share of its assets, so there is a conflict between equity and practicality. The same is true for advice on a policy dividend scale.

.03 The standard of materiality also depends on the work and the entity that is the subject of that work. For example,

- A given dollar standard of materiality is more rigorous for a large than for a small entity;
- The standard of materiality for valuation of an insurer's policy liabilities is usually more rigorous for those in its financial statements than for those in a forecast in financial condition testing;
- The standard of materiality for data is more rigorous for calculating an individual benefit (such as in a pension plan wind-up) than for a valuation of a group benefit plan (such as a going concern valuation of a pension plan); and
- The standard of materiality for work involving a threshold, such as a regulatory capital adequacy requirement calculation of an insurer or a statutory minimum or maximum funding level for a pension plan would become more rigorous as the entity approaches that threshold.

.04 The actuary would not report an immaterial deviation from a particular recommendation or other guidance in these standards except if doing so assists a user to decide whether the standard of materiality is appropriate for that user.

.05 The recommendation applies to both calculation and reporting standards.

Calculation standards

.06 The result of applying a recommendation may not differ materially from the result of a simpler practice requiring less time and expense. For example, the practice-specific recommendations for valuation of insurance contract liabilities for term life insurance have little effect on an issuer whose volume of term life insurance is trivial. To ignore them in that situation is accepted actuarial practice if it helps the actuary to concentrate time and resources on material items.

.07 In considering materiality, it is not appropriate to net items that are reported separately. For example, if simple practices requiring less time and expense than those in the recommendations materially overstate the premium liabilities and materially understate its claim liabilities, but do not materially affect their sum, the understatement and overstatement are each material if the two items are reported separately. In considering materiality, it is, however, appropriate to net components within a separately reported item. To continue the example, it would be appropriate to net the overstatement of premium liabilities with the understatement of claim liabilities if only the sum of the two (i.e., the insurance contract liabilities) is reported.

.08 The effect of using a simpler practice requiring less time and expense than those in the recommendations may be conservative or not conservative. Usually, the criterion of materiality is the same in both cases.

Reporting standards

.09 The result of applying a recommendation may provide information that is not useful. For example, disclosure of a material change in the basis for valuing the liabilities with respect to a material class of a benefit plan's members is not useful if that class was trivial at the previous valuation. Also, description of immaterial provisions of a benefit plan is not useful. To ignore the recommendation is accepted actuarial practice in that situation.

1300 The Engagement

1310 Accepting and continuing an engagement

.01 In accepting an engagement, the actuary should agree on its terms with the actuary's client or employer and be satisfied that it is an appropriate engagement. [Effective February 1, 2018]

.02 In performing the engagement, if the actuary becomes aware of information that, if known beforehand, would have been an impediment to acceptance of the engagement, the actuary should

- Renegotiate the engagement to remove the impediment;
- Discontinue the engagement; or
- Provided that the engagement continues to be an appropriate engagement, report the impediment and its implications. [Effective February 1, 2018]

.03 The actuary would consider consultation with the predecessor actuary, if any, to determine whether there is any reason not to accept the engagement.

Terms of the engagement

.04 The likelihood that work is satisfactory to all users concerned is enhanced by a clear understanding between the actuary and the client or employer on the terms of the engagement. Detailed identification of the time and resources involved, especially if they are substantial, and of the information needed to be communicated to and by the actuary, especially if it is sensitive or confidential, will avoid misunderstanding.

Appropriateness of engagement

.05 The following guidance is useful in judging if the engagement is an appropriate engagement:

- An engagement is prima facie appropriate if there are practice-specific standards that apply to it, especially if it does not call for a deviation from accepted actuarial practice.
- An engagement's appropriateness is not likely affected if the actuary's client or employer selects particular assumptions as part of the terms of the engagement and the report describes the assumption and identifies the source, or chooses a value for certain assumptions from within a range selected by the actuary.
- An engagement to report on alternative scenarios or "What if?" questions is appropriate, given appropriate disclosure.

- An engagement is less likely to be appropriate if it denies reasonable opportunity for an external user to question the actuary about his or her report.

.06 An engagement may involve a duty of confidentiality that conflicts with a recommendation on disclosure in reporting. That engagement would be appropriate, however, and the duty of confidentiality would supersede (at least temporarily) the duty of disclosure, if

- Confidentiality is necessary for the legitimate business objective of the client or employer;
- The extent of the information to be kept confidential is reasonable;
- The length of time for which it is to be kept confidential is reasonable; and
- The duty of confidentiality permits reasonable exceptions; for example, if the actuary is permitted to disclose the information to, and to discuss the engagement with, an auditor or a regulator.

.07 For example, the engagement may be appropriate if the actuary temporarily withholds knowledge of

- A mistake that favours his or her client in the report of the actuary engaged by the other side in litigation;
- The imminent closure of a participating employer's Canadian operations and the consequent job loss and winding-up of the plan in giving advice on its funding, but the actuary would consider the need for an early revaluation or wind-up valuation; or
- An insurer's imminent acquisition by new shareholders who will alter its business plan in reporting in the insurer's financial statements, but the actuary would consider the implications of the new business plan in reporting to the insurer's directors on financial condition.

.08 That engagement would not be appropriate, however, if the information is to be kept confidential in order to conceal improper business conduct, or to withhold information from users of the actuary's work who may reasonably expect the actuary to report it to them.

.09 Any duty of confidentiality would give way to a duty of disclosure if disclosure is mandated by law, or if disclosure is required by a professional body to whom the actuary is subject.

.10 Whether an engagement is appropriate depends on the actuary as well as on the engagement. For example, an actuary would not accept an engagement to perform work that the actuary is not qualified to do or where the actuary has an undisclosed conflict of interest.

Subsequent information

.11 While performing the engagement, the actuary may become aware of information that, if known beforehand, would have been an impediment to acceptance of the engagement. For example,

- The actuary's understanding of the engagement differs from that of the client or employer;
- The data are not sufficient or not reliable and cannot be remedied; or
- Promised resources are not forthcoming and a substitute for them is not practical.

.12 Renegotiation that removes the impediment would usually be the preferred alternative. Discontinuance would be the only alternative if the new information reveals the engagement not to be appropriate and renegotiation to make it so is impractical, which would be the case, for example, if an appointed actuary is denied access to needed information.

.13 Failing renegotiation or discontinuance, the actuary would deal with the impediment by reporting it and its implications. Description of the implications would include both qualitative and quantitative aspects and their effect on the actuary's opinion.

1320 Financial interest of the actuary

.01 The financial interest of the actuary should not influence the result of the actuary's work. [Effective February 1, 2018]

1330 Financial interest of the client or employer

.01 The financial interest of the actuary's client or employer should not influence the result of the actuary's work except to the extent that the client or employer selects assumptions or methods for the work. [Effective February 1, 2018]

.02 The actuary's client or employer may have a financial interest in the result of the actuary's work. For example, it may be in the client's or employer's interest to maximize or minimize the result. That is usually the case when the actuary's client is one side of opposing interests; for example, the plaintiff or defendant in litigation, the purchaser or vendor in a sale, and the employer or union in labour negotiations.

.03 In such a case, the actuary's duty of professionalism supersedes the duty of service to the client or employer.

.04 In giving advice to a participating employer regarding the funding of a benefit plan, the actuary may first calculate a range, at any point of which funding would be appropriate. That range is the crux of the work, so a participating employer's financial interest would not influence its calculation. It is, however, appropriate and usually desirable for the actuary to consult the participating employer in the selection of the recommended funding within the range. The participating employer's financial interest—for example, the participating employer's tolerance of fluctuation in the recommended rate of funding between one funding period and the next—would be taken into account in that consultation.

.05 Note, however, that the recommendation does not preclude the actuary's use of assumptions or methods selected by the client or employer in an appropriate engagement, but the actuary would report such use.

.06 Note also that the purpose of the work will influence the actuary's selection of assumptions and methods. The financial interest of the client or employer may shape the purpose of the work if the engagement is an appropriate engagement and the purpose is reported.

1340 General knowledge

.01 The actuary should have adequate knowledge of the conditions in the practice area in which the actuary is working. [Effective February 1, 2018]

.02 Where the actuary's work in a practice area meets the definition of actuarial evidence work, the actuary should have adequate knowledge of the conditions in both the practice area in which the actuary is working and the actuarial evidence practice area. [Effective February 1, 2018]

.03 The relevant conditions may include legislation, accounting standards and policies, taxation, the financial markets, family law, and court practices. The relevant legislation depends on the engagement, and may include legislation governing securities, pensions, insurance, workers' compensation, and employment standards.

1350 Knowledge of the circumstances affecting the work

.01 The actuary should take into account the circumstances affecting the work that the actuary is undertaking. [Effective February 1, 2018]

.02 The circumstances affecting the work include the purpose of the work, the terms of the appropriate engagement under which the work is being performed, and the application of the law to the work.

.03 The relevant knowledge for a corporate entity or benefit plan is that of the operations of the entity itself and may include that of the industry in which the entity operates. Usually, the entity is the actuary's client or employer but may be a proposed acquisition or merger partner of the client or employer.

.04 In the case of a benefit plan, the entity is the plan itself, but, depending on the engagement, knowledge of the business conditions of the participating employer(s) may also be relevant.

.05 The relevant knowledge for calculation with respect to an individual is the demographics of the individual and the context of the calculation.

.06 Additional conservatism in making a calculation is not a substitute for knowledge of the circumstances affecting the work.

1400 The Work

1410 Approximation

.01 An approximation is appropriate if it reduces the cost of, reduces the time needed for, or improves the actuary's control over, work without affecting the result. [Effective February 1, 2018]

.02 If the actuary reports an appropriate approximation, the report should avoid unintended reservation. [Effective February 1, 2018]

.03 If the appropriateness of an approximation is doubtful, the actuary should report its use with reservation. [Effective February 1, 2018]

.04 Like materiality, to which it is related, approximation pervades virtually all work and affects the application of nearly all standards. The words "approximation" and "approximate" seldom appear in these standards, but are understood throughout them.

.05 Approximation permits the actuary to strike a balance between the benefit of precision and the effort of arriving at it.

Approximation in selection of a model

.06 Reality is complex. A simple model reduces not only the time and expense of work but also the risk of calculation and data error.

.07 The appropriateness of a simplification depends on the circumstances affecting the work and the purpose of the work. For example, in selecting a model for advice on funding a pension plan, it may be appropriate to allow for indexing by modifying the assumption for a contingency of which the model takes account, such as the investment return assumption, to arrive at an appropriate composite assumption.

Approximation in the selection of assumptions

.08 Simplification of an assumption may be an appropriate approximation. For example,

- Deaths occur continuously over a year; for simplicity, assume that they all occur at the middle of the year;
- Members of a pension plan with early retirement reductions that approximate full actuarial reductions retire at various rates between, say, ages 55 and 65; for simplicity, assume that they all retire at, say, age 62; and
- If the members of a pension plan who die before retirement are entitled to a benefit that is roughly the same as the present value of the retirement benefit, for simplicity, assume that death rates before retirement are equal to zero.

.09 To make no assumption about a contingency is usually tantamount to assuming a zero rate for that contingency, which is rarely appropriate in itself, but may be appropriate when combined with an adjustment to a related assumption. For example, in some circumstances, the calculation of the liabilities in a benefit plan using an explicit wage and price inflation assumption may be approximated by calculating the liabilities without an explicit wage and price inflation assumption and using a lower liability discount rate assumption representative of the real rate of return.

Approximation by sampling

.10 A well-chosen sample avoids the extra work of an examination of the entire universe.

Approximations respecting data

.11 Data may be defective. For example, a benefit plan's records may lack the date of birth of certain members. In some cases there is an appropriate approximation, for example, sampling, or extrapolation from similar situations for which data are available.

Approximation vs. assumption

.12 A criterion of the appropriateness of an approximation is its effect on the result. If the actuary approximates but is unable to assess the resulting error, the approximation becomes, in effect, an assumption. For example, data are missing and it is not practical to get them. The actuary would consider whether their lack is so important that a report with reservation is necessary, but in any case is obliged to make an assumption about them in order to do the work.

Reporting approximations

.13 To report appropriate approximations in a longer report may provide information useful to users, but such reporting would avoid unintended reservation, as the use of approximations is a usual part of work. The pervasiveness of approximations in work makes their complete reporting impractical.

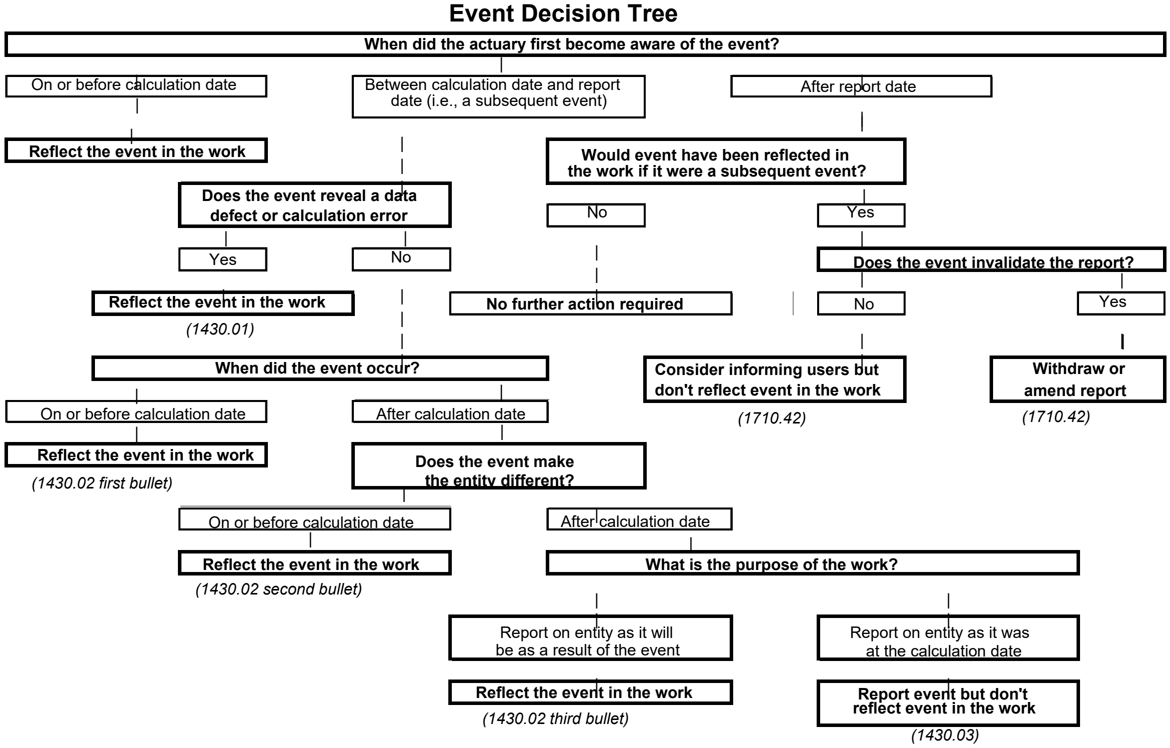
.14 If the actuary reports an implicit assumption used as an approximation, he or she would also report the corresponding explicit assumption or assumptions. Similarly, if an actuary reports approximations for two offsetting assumptions that result in the same net effect as the underlying explicit assumptions, the actuary would also report the explicit assumptions.

.15 The actuary would not usually use an approximation whose appropriateness is doubtful. That may be unavoidable, however, if data are insufficient or unreliable or if needed resources are lacking. If the engagement is an appropriate engagement, the actuary would report with reservation the use of the approximation, so that a user is aware of a limitation to the actuary's work.

1420 Event

.01 The following decision tree may assist an actuary in deciding how to reflect an event in the work, if the actuary determines that the event makes the entity different.

Event Decision Tree



1430 Subsequent events

.01 The actuary should correct any data defect or calculation error that is revealed by a subsequent event. [Effective February 1, 2018]

.02 For work with respect to an entity, the actuary should take a subsequent event into account (other than in a pro forma calculation) if the subsequent event

- Provides information about the entity as it was at the calculation date;
- Retroactively makes the entity different at the calculation date; or
- Makes the entity different after the calculation date and a purpose of the work is to report on the entity as it will be as a result of the event. [Effective February 1, 2018]

.03 The actuary should not take the subsequent event into account if it makes the entity different after the calculation date and a purpose of the work is to report on the entity as it was at the calculation date. Nevertheless, the actuary should report that subsequent event. [Effective February 1, 2018]

Classification

.04 A subsequent event is relevant to the recommendation if it reveals an error, provides information about the entity, or is a decision that makes the entity different.

.05 The actuary would correct an error revealed by a subsequent event. The actuary would classify each subsequent event other than those that reveal errors and, depending on the classification, the actuary would either

- Take that event into account; or
- Report that event, but not take it into account.

Entity

.06 Examples of entities are

- The pension plan, in the case of an actuary doing a valuation of a pension plan;
- The block of annuity business, in the case of an actuary calculating the insurance contract liabilities for an issuer's annuity business;
- A combination of the pension plan and the member's specific data, in the case of the determination of a member's individual entitlement under a pension plan; and
- The insurance company, in the case of an actuary valuing the insurance contract liabilities of an insurance company.

Event provides information about entity as it was or retroactively makes entity different

.07 Examples of subsequent events that provide information about an entity as it was at the calculation date are

- Publication of an experience study that provides information for selection of assumptions;
- Reporting of a claim that was incurred on or before the calculation date; and
- Adoption of a pension plan amendment prior to the calculation date of which the actuary becomes aware after the calculation date.

.08 Examples of events that retroactively make the entity different at the calculation date are definitive or virtually definitive decisions, made after the calculation date but effective on or before the calculation date, to

- Wind-up a pension plan, partially or fully;
- Sell a portion of a participating employer's business and consequently to spin off the corresponding members from the participating employer's pension plan;
- Amend the benefits of a pension plan;
- Transfer a portion of an insurer's policies to another insurer; or
- Invoke a judicial decision that nullifies or significantly modifies the law affecting insurance claims.

.09 If an event provides information about the entity as it was at the calculation date or provides information that retroactively makes the entity different at the calculation date, the effect of the subsequent event on the work is the same as if the actuary first became aware of the information on or before the calculation date and the actuary would not report the event as a subsequent event. That is, the actuary would report the event only to the extent that the event would have been reported had the actuary first become aware of the information before the calculation date.

Event makes entity different after

.10 If the subsequent event makes the entity different after the calculation date, the purpose of the work determines whether or not the actuary takes the event into account.

.11 If the subsequent event makes the entity different after the calculation date and the purpose of the work is to report on the entity as it will be as a result of the event, the actuary would take that event into account and would describe it in reporting.

.12 If the subsequent event makes the entity different after the calculation date and the purpose of the work is to report on the entity as it was at that date, the actuary would not take that event into account but would report the event since it would affect the entity's future operations and the actuary's subsequent calculations.

Classification not clear

.13 The classification of a subsequent event may be unclear, at least a priori, although the circumstances affecting the work and the actuary's engagement may make it clear. The following are examples of such events:

- A precipitous fall in the stock market. For financial reporting, one can argue that the stock market crash provides additional information about the entity as it was at the calculation date, because the crash is an indicator of the outlook for common share investments at that date; alternatively, one can argue that the crash makes the entity different only after the calculation date since it creates a new situation. The new situation would be reflected in the financial statements for the subsequent financial reporting period.
- A salary freeze for employees who are members of a pension plan. If the salary freeze is a correction of excessive salaries, it provides additional information about the entity as it was at the calculation date, because the freeze is an indicator of the outlook for salaries at the calculation date. If the salary freeze deals with a recent problem, it indicates a change in conditions that makes the entity different after the calculation date. In either case, the actuary would consider the effect of the freeze on the employees' pension benefits. It may be that the freeze will have a lasting effect. Alternatively, it may be that the freeze will be compensated for by higher salaries later on, so that the salary inflation assumption based on historical trends continues to be valid.
- Default on a bond. If the default was the culmination of a gradual deterioration in its issuer's financial circumstances, most of which had occurred before the calculation date but that was not apparent until revealed by the default, the default provides additional information about the entity as it was at the calculation date. If the default was precipitated by a catastrophe, it provides information about a change in conditions that makes the entity different after the calculation date.
- Insolvency of an insurer's reinsurer. This is similar to default on a bond. If the insolvency was the culmination of a gradual deterioration in the reinsurer's financial circumstances, most of which had occurred before the calculation date but that was not apparent until revealed by the insolvency, the insolvency provides information about the entity as it was at the calculation date. If the insolvency was precipitated by a catastrophe, it provides information about a change in conditions that makes the entity different after the calculation date.

Reporting

.14 Sometimes, either because the actuary considers it appropriate or the terms of the work require it, the actuary may report as an alternative the opposite calculation; i.e., one that does not take the subsequent event into account when the main calculation does, or that takes the subsequent event into account when the main calculation does not. For example, in a province for which the calculation date for a pension valuation following marriage breakdown is the date of separation, a subsequent event may be the early retirement of the plan member at some time between the calculation date and the report date. The actuary would consider reporting values assuming that this subsequent event had been an established intention at the calculation date, instead of or in addition to retirement scenarios otherwise recommended in the practice-specific standards. In such cases, the actuary would make the same calculations regardless of the purpose of the work but the reporting thereof would depend on the purpose of the work.

1440 Data

.01 The actuary should apply such procedures as are necessary for the actuary to arrive at a conclusion as to the sufficiency and reliability of the data. [Effective February 1, 2018]

.02 Data relevant to the work may include experience data, membership or policyholder data, census data, claims data, asset and investment data, economic data, operational data, benefit definitions, and policy or contract terms and conditions and other data relevant to the work.

.03 Sources of data may include data obtained from inventory or sampling methods. Data may be obtained directly by the actuary or may be provided to the actuary by the client, by an accountant or auditor, by a government or statistical body, from a financial statement, or by others. Data may be specific to the client. Where data specific to the client are not available or not relevant, the actuary would consider using industry data, population data, or other published data with suitable adjustments where relevant and appropriate.

Sufficiency and reliability

.04 Data are sufficient if they include the needed information for the work. For example, participants' dates of birth are needed to value the liabilities of a pension plan.

.05 Data are reliable if they are sufficiently complete, consistent, and accurate for the purposes of the work.

.06 The actuary would test the sufficiency and reliability of (i.e., validate) the data as may be appropriate for the work but is not normally required to perform a detailed audit and is not responsible for discovering falsified or misleading data. If the terms of an appropriate engagement prevent the actuary from performing a validation of the data, the actuary would so report, and report any apparent or evident shortcomings in the data.

.07 Validation of the data may include reconciliation against financial statements and books of account or other external data, examination of internal and external consistency, comparison with prior periods, availability of independent confirmation from other sources, or detailed confirmation using sampling techniques.

.08 If sufficient and reliable data cannot be obtained or the actuary is unable to ascertain the sufficiency or reliability of the data the actuary would, after first attempting to rectify the data, consider whether to report with reservation in respect of the data or to decline to perform the work.

.09 Data may be rectified by obtaining corrected, more complete, alternative, additional, or supplementary data; by making assumptions with respect to incomplete data; or by making adjustments to the data.

.10 If assumptions or adjustments applied to data by the actuary may cause material uncertainty or bias in the results of the work, the actuary would so report and would report any limitations on the use of the work product where appropriate.

Reliance on others

.11 The actuary usually uses data prepared by another party such as the client, an independent administrator, an auditor, a government body, or an external association. When placing reliance on such data, the actuary would consider the qualifications, competence, integrity, and objectivity of the party providing the data.

1450 Models

.01 When the work involves the use of a model, the actuary should

- choose a model appropriate to the purpose and requirements of the work; and
- understand any limitations in the model that might make the results of the model inappropriate for the intended purpose or might produce a misleading result. [Effective January 1, 2018]

.02 Like approximation, models pervade virtually all work and affect the application of most standards. The word "model" seldom appears in the standards, but is understood throughout them.

Amount of effort required

.03 The amount of effort in validation, documentation and risk mitigation would depend primarily on the influence that the model has on the decisions that it supports, and to a lesser extent on the complexity of the calculations and how they are performed. The actuary would determine how much effort is required for a particular model taking into account the use of the work and the benefit that users would be expected to obtain from enhanced diligence.

- Some models are so simple or otherwise have such low model risk that the actuary is able to exercise appropriate diligence without formal documentation or reporting. Examples of such models are
  - models that are so simple that they could be performed effectively manually; and
  - models that are used solely to validate other models that are used in the actuary's work.
- Some models are used repeatedly from the same model specification and the same model implementation but with different input data and/or assumptions. In that case, the diligence for choosing a model and for validating the model specification and model implementation is normally done only once. Documentation for each model run would normally be limited to noting the inputs and the version of the model used; and
- Some models would require extra diligence because of greater financial significance, increased complexity, or greater uncertainty about the fit of the model to the more complex system it represents.

Appropriate Model

.04 A model is appropriate and is used appropriately if

- the model enables the actuary to better understand a complex reality, at a reasonable cost, while maintaining the aspects of that reality that are important to the work;
- the model specification indicates that the intended purpose can be achieved by the model;
- the model implementation has been verified as an accurate representation of the model specification;
- each model run uses input data and assumptions consistent with the model specification; and
- each model run is interpreted as set out in the model specification.

A standard actuarial method used within a model in its proper context would be considered appropriate without further justification; for example, actuarial present value method for a pension valuation and the chain ladder method and Bornhuetter-Ferguson method for unpaid claims liabilities.

1460 Quality Assurance

.01 This subsection 1460 applies to quality assurance processes that are at the instigation of the actuary responsible for the work. Such processes include quality control in the actuary's firm or employer as well as review by persons external to the actuary's firm or employer.

.02 The actuary should implement appropriate quality assurance processes prior to the release of work to users. [Effective July 1, 2019]

.03 In deciding what quality assurance processes are appropriate and proportionate, whether different processes are suitable for different elements of the work, and when the processes would be carried out, the actuary would consider the relevant circumstances, including:

- The degree of difficulty of the various elements of the work, the extent to which professional judgment is required and the overall complexity of the work;
- The purpose of the work and the extent (if any) to which the users may reasonably be expected to challenge it;
- The significance of the work, including any financial, reputational or other consequences for the users;
- The reasonable expectations of the users;
- Whether the way in which the work is carried out makes it vulnerable to errors;
- The novelty of the work and the actuary's experience in performing similar engagements; and
- Whether there are legislative or regulatory requirements for the work to be peer reviewed.

.04 Quality assurance processes include calculation control procedures and model validation, as described in subsection 1470, calculation result examination as described in subsection 1480, self-checking of the work, repetition of the work and peer review. Appropriate quality assurance processes may differ for different elements of the work.

.05 Peer review is a process by which one or more components of an actuary's work are considered by at least one other individual for the purpose of providing assurance as to the quality of the work in question. Peer review can be an important component of the quality assurance process for an actuary's work.

.06 The actuary should select a peer reviewer with the appropriate experience and expertise to perform the peer review. If a person is qualified to have performed the work to be reviewed, then that is prima facie evidence that the person is also qualified to perform the peer review. [Effective July 1, 2019]

.07 The actuary would consider to what extent any peer review should be in the form of independent peer review, whereby one or more components of an actuary's work are considered by at least one other individual who is not otherwise involved in the work in question, who has the appropriate experience and expertise to perform the peer review, and is in a position to effectively challenge the work. The perceived objectivity of a reviewer is enhanced if the reviewer is independent of the actuary performing the work.

.08 Where one or more individuals is involved in the quality assurance processes, the actuary would clarify each person's role and responsibilities.

.09 For actuarial evidence work, peer review might be precluded due to the circumstances affecting the work. The absence of peer review under such circumstances would not indicate a weakness in the quality of assurance processes applied to the work. Where the actuary is expected or required to be independent in performing the work, the scope of any peer review would be defined so as not to impair such independence.

1470 Control

.01 Control procedures that detect errors and decrease the effect of errors should be performed for calculations. [Effective February 1, 2018]

.02 To mitigate model risk, the actuary should perform model validation and employ other strategies appropriate for the financial significance of the results and the complexity of the model. [Effective January 1, 2018]

.03 A calculation that is data-intensive, that is complex, that involves physically separate steps like manual and data processing steps or parallel data processing steps, or especially, a combination of them, is prone to error that appropriate control procedures may prevent or, failing prevention, detect. Appropriate control procedures also help to meet the need for consistency between the actuary's work and other related work; for example, a uniform cut-off date in the preparation of financial statements.

.04 Examples of control procedures are procedures to ensure that

- All steps in the calculation are coordinated;
- All steps in the calculation have been performed and checked;
- The actuary's data processing does not corrupt the data supplied to the actuary;
- Established procedures (for example, those for a prior period) are not changed inadvertently; and
- Changes in established procedures are made in an orderly manner.

.05 Examples of control tools are

- Random sampling;
- Spot checks; and
- Audit trails.

.06 The actuary would test that the model implementation uses the data and assumptions as intended by the model specification. The actuary would also verify that the methods used by the model implementation function as intended by the model specification. The reasonableness of the model run may be tested by using alternative models. Various components of a complex model may be compared to results obtained by separate models.

.07 The actuary would validate that the model specification is suitable for its intended purpose. For example, a stochastic model may be more suitable than a deterministic model for the valuation of minimum guarantees in some life insurance policies.

.08 Strategies to mitigate model risk are also pertinent to models developed by third parties and those for which the actuary has limited access to intermediate results, but the range of strategies may be more limited than with other models.

.09 In assessing a model's suitability, the actuary would understand the model's basic operations, important relationships, major sensitivities, limitations, strengths, and potential weaknesses.

.10 When a model is to be used for stress tests or is stochastic, the actuary would give appropriate consideration to the statistical distributions used and the magnitude and behaviour of tail events in light of the nature of the work.

1480 Reasonableness of result

.01 The actuary should examine the reasonableness of a calculation's result. [Effective February 1, 2018]

.02 As a result of defective data, defective computer software, an accumulation of individually biased assumptions, or the like, a calculation, especially a complex one like a valuation or financial forecast, may be prone to error that checking of the calculation's steps does not reveal but that an examination of its result may reveal. Such an examination is therefore useful and prudent.

.03 The examination would consider simple questions like the following.

- How does the result compare to the corresponding result for a prior period or a similar case, or to a related but independently calculated amount? Comparison of a benchmark may be more meaningful than comparison of the result. Examples of a benchmark are the forecasted number of retirees divided by the forecasted number of active employees, the loss ratio implied by claim liabilities, and the change during the year of the result.
- How does the result compare to the corresponding result of a rough approximation?
- Does the result make common sense?

.04 The answers to such questions may indicate a need for more work.

1490 Documentation

.01 The actuary should use his or her best efforts to compile and secure the retention of appropriate documentation. [Effective February 1, 2018]

.02 Documentation consists of letters of engagement, working papers, meeting notes, memoranda, correspondence, reports, copies or excerpts of company or plan data and documents, and work plans. Appropriate documentation describes the course of the work and its conformity with accepted actuarial practice.

.03 Both professional and legal needs may affect the length of time during which documentation is to be retained.

.04 The actuary's documentation for a model, if required, would typically include

- the intended purpose of the model;
- the appropriateness of the model specification for the intended purpose;
- the limitations of the model specification relevant to the model's intended purpose;
- the testing of the model implementation; and
- the presence of appropriate mitigating strategies for model risk.

.05 Model documentation would typically be sufficiently detailed to enable another actuary knowledgeable in the matters at hand to form an assessment of the judgments made and of the reasonableness of the model run.

.06 When a model is based in whole or in part on a model developed by a third party, the actuary would document how the actuary assessed the model as being appropriate for the purpose.

.07 The actuary should document the quality assurance processes that were followed in performing the work. [Effective July 1, 2019]

1500 Another Person's Work

1510 Actuary's use of another person's work

.01 The actuary may use and take responsibility for another person's work if such actions are justified. If the actuary uses but does not take responsibility for another person's work, the actuary should so report. [Effective February 1, 2018]

.02 Where the work involves the use of data provided by another person, subsection 1440 Data applies.

.03 Use of the work of other persons is a usual, indeed often inevitable, part of work. The actuary uses and takes responsibility for the work of colleagues and assistants; that use is usually straightforward because the actuary is able to assess the appropriateness of their work.

.04 If the actuary uses the work of a person other than colleagues and assistants, the actuary may or may not take responsibility for that person's work. Taking responsibility may require more work of the actuary and may expose the actuary to risk of legal liability, but may give the user greater confidence that the other person's work is appropriate.

.05 The actuary would not take such responsibility if doing so would lead a reasonable person to believe that the actuary possessed and purported to exercise the skill and learning of a duly qualified professional in that other person's profession.

.06 If the actuary does not take such responsibility, the actuary reports with reservation and the user would seek alternative assurance that the other person's work is appropriate, which may or may not be practical.

Use and take responsibility

.07 The actuary may use and take responsibility for another person's work, given confidence that such actions are justified as a result of considerations such as the following:

- Early and periodic communication with the other person;
- Confidence in the other person's qualifications, competence, integrity, and objectivity;
- The other person's awareness of how the actuary intends to use the other person's work;

- Communication to the other person of any information known to the actuary that may affect the other person's work, and vice versa; and
- Study of any report by the other person and discussion of it with the other person, especially of any reservation in the report.

.08 The Canadian Institute of Actuaries encourages its members to use the work of an auditor in accordance with the Joint Policy Statement included in subsection 1520 of these standards of practice. The Joint Policy Statement also provides useful guidance if the actuary uses the work of a person other than an auditor.

.09 Although an actuary may take responsibility for the work of another actuary in accordance with this section, the actuary who performed the work also continues to be responsible for that work.

.10 In the case of use of another actuary's work, it may also be useful to

- Identify the differences between accepted actuarial practice in Canada and the practice that the other actuary followed if the other actuary worked outside of Canada; and
- Review the other actuary's working papers.

.11 The actuary need not report use of another person's work if the actuary takes responsibility for that work. To do so may imply a reservation.

Use but not take responsibility

.12 If the actuary uses but does not take responsibility for another person's work, the actuary would nevertheless examine the other person's work for evident shortcomings and would either report the results of such examination or avoid use of the work. For clarity, even though the other person may use a model in his or her work, the actuary is not considered to have used that model.

1520 Auditor's use of an actuary's work

.01 The actuary should cooperate with an auditor who wishes to use the actuary's work in accordance with the following Joint Policy Statement. [Effective February 1, 2018]

Joint Policy Statement
concerning communications between actuaries
involved in the preparation of financial statements and auditors

This Joint Policy Statement, effective for communications between the auditor and the actuary initiated on or after March 31, 2023, has been approved by the Canadian Actuarial Standards Board and by the Auditing and Assurance Standards Board. Early application is permitted.

Purpose and application

1. The purpose of the Joint Policy Statement ("Statement") is to facilitate effective communication between an auditor and an actuary as the two professionals conduct their respective engagement relating to the entity's financial statements. This Statement sets out the process for:

   a) communications between an actuary involved in the preparation of financial statements, and an auditor, regarding their respective responsibilities;

   b) how the actuary and auditor would interact in carrying out their respective responsibilities; and

   c) how their respective responsibilities may be disclosed to readers of financial statements.

2. This Statement applies when:

   a) an auditor is engaged to carry out an audit of financial statements in accordance with generally accepted auditing standards where the financial statements prepared by management include amounts determined by or with the assistance of an actuary; or

   b) an actuary uses the work of an auditor in connection with conducting the actuarial valuation to determine amounts to be included in the financial statements prepared by management.

3. The financial statements of a pension plan or post-employment benefits plan and of the sponsor of such plans, and the financial statements of an insurance enterprise are examples of when this Statement applies.

4. This Statement is not intended to address:

   a) an actuary's request for the auditor to perform work that is not part of the audit of the financial statements; or

   b) an auditor's request for the actuary to perform work that is not part of the actuarial valuation to determine amounts to be included in the financial statements.

   For such requests, the professionals may consider recommending to management that another type of engagement be undertaken. For example, an auditor may consider recommending that an engagement under Canadian Standard on Related Services (CSRS) 4400, *Agreed-Upon Procedures Engagements*, be undertaken.

5. This Statement does not apply to communications between:

   a) an auditor and the auditor's actuary; or

   b) an actuary and the external review actuary.

6. This Statement does not supplant the respective professional's responsibilities under the applicable professional standards.

Definitions

7. For the purposes of this Statement:

   a) "Actuary involved in the preparation of financial statements" means an actuary, either an employee of the company or an external consultant, who determines and reports on amounts to be included in the financial statements prepared by management;

   b) "Applicable professional standards" means:

      i) when the responding professional is an actuary, the Standards of Practice and the Rules of Professional Conduct of the Canadian Institute of Actuaries; and

      ii) when the responding professional is the auditor, the Canadian Standards on Quality Management and the Canadian Auditing Standards (CASs) in the CPA Canada Handbook – Assurance and the relevant independence and other ethical requirements set out in the rules of professional conduct / code of ethics applicable to the practice of public accounting issued by various professional accounting bodies.

   c) "Auditor" means a person or persons conducting the audit, usually the engagement partner or other members of the engagement team, or, as applicable, the firm;

   d) "Auditor's actuary" means an actuary with the necessary skills, knowledge and experience used by the auditor to assist the auditor in obtaining sufficient appropriate audit evidence;

e) “Data” includes particulars of:

   i) invested assets of a pension plan or post-employment benefits plan or an insurance enterprise;

   ii) membership of a pension plan or post-employment benefits plan;

   iii) policies of and claims against an insurance enterprise; and

   iv) reinsurance of an insurance enterprise;

f) “External review actuary” means an actuary who reviews the work of another actuary at the request of a regulator and provides an opinion to the regulator as to whether the work meets applicable professional standards and accepted actuarial practice;

g) “Financial statements” means a structured representation of historical financial information, including disclosures, intended to communicate an entity's economic resources or obligations at a point in time, or the changes therein for a period of time, in accordance with a financial reporting framework. The term "financial statements" ordinarily refers to a complete set of financial statements as determined by the requirements of the applicable financial reporting framework but can also refer to a single financial statement. Disclosures comprise explanatory or descriptive information, set out as required, expressly permitted or otherwise allowed by the applicable financial reporting framework, on the face of a financial statement, or in the notes, or incorporated therein by cross-reference.

h) “Inquiring professional” means the actuary or the auditor, as the case may be, who is using the work of the other;

i) “Insurance enterprise” includes the following enterprises, including companies, branches, fraternal benefit societies and other forms of organizations:

   i) life insurance enterprises;

   ii) property and casualty insurance enterprises;

   iii) reinsurance enterprises; and

   iv) workers’ compensation enterprises.

j) “Management” refers to the person(s) with executive responsibility for the conduct of the entity’s operations;

k) "Responding professional" means the actuary or the auditor, as the case may be, whose work is being used by the other; and

l) "Underlying engagement" refers to the engagement for which the auditor or the actuary is appointed by law or engaged by the shareholders, policyholders, directors, or management to perform. This means:

   (i) the financial statement audit engagement for the auditor; and

   (ii) the engagement to determine, or assist management in determining, actuarial amounts in the financial statements for the actuary.

Responsibilities with respect to financial statements

8. The financial statements are the responsibility of management. The representations contained in the financial statements may include amounts determined by an actuary. The auditor is responsible for expressing an audit opinion on whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework.

9. The actuary or the auditor may choose to use the work of the other professional. The process of using the work of the other professional starts with the inquiring professional initiating a discussion with the responding professional. This discussion facilitates the ability of the inquiring professional to use the responding professional's work. For example:

   a) In determining relevant financial statement amounts, the actuary is responsible for assessing the relevance, sufficiency and reliability of the data used in the valuation. The actuary may discuss with the auditor the nature, timing and extent of the auditor's procedures relating to data integrity to facilitate the actuary's use of the auditor's work for assessing the relevance, sufficiency and reliability of the data. In such cases, the actuary involved in the preparation of the financial statements acts as the inquiring professional and the auditor acts as the responding professional.

   b) When the financial statements include amounts determined by an actuary, the auditor may discuss with the actuary the assumptions, methods and data used to determine the actuarial amounts to facilitate the auditor's use of the actuary's work as part of the audit evidence supporting the actuarial valuation. In such cases, the auditor acts as the inquiring professional and the actuary involved in the preparation of the financial statements acts as the responding professional.

Using the responding professional's work

10. The inquiring professional may use the work of the responding professional provided that the inquiring professional takes reasonable care to determine that there is a basis for such use. This is done by communicating with the responding professional in accordance with this Statement.

11. Use of a responding professional's opinion or their work does not constitute reliance. The Standards of Practice of the Canadian Institute of Actuaries are premised on the actuary being responsible for their work, and that responsibility is not diminished by using the work of others. Similarly, the CASs are premised on the auditor having sole responsibility for the audit opinion expressed on the financial statements, and that responsibility is not reduced by the auditor's use of the work of others.

Communication between the two professionals

12. Communication would be established between the auditor and the actuary involved in the preparation of the financial statements when planning their respective engagements, and further communication would take place as necessary throughout the engagement.

13. On a timely basis, each professional seeks from management the right to:
    a) communicate with the other professional; and
    b) when necessary, disclose any relevant information to the other professional.

14. The inquiring professional would:
    a) inform the responding professional of the intended use of their work in accordance with this Statement, including, if applicable, the intended use of the responding professional's work or name in communications with third parties to avoid potential inappropriate use of the responding professional's work or name;
    b) request confirmation from the responding professional that they have been appointed by law or engaged by the shareholders, policyholders, directors, or management to perform the underlying engagement;
    c) request confirmation from the responding professional that they are a professional in good standing;
    d) request confirmation from the responding professional that they would carry out the underlying engagement required in accordance with the applicable professional standards; and

e) make the responding professional aware of the inquiring professional's needs. This would include a discussion of:

i) the applicable financial reporting framework and accounting policy choices and the actuarial valuation choices to provide the respective professional with a basis to evaluate potential impacts, if any, arising from differences between the applicable financial reporting framework and accounting policy choices and the actuarial valuation choices;

ii) the application of materiality to determine whether the responding professional is using a materiality level that is appropriate for the inquiring professional's purposes;

iii) subsequent events, to determine that the responding professional understands how they are to be treated and that the responding professional would consider the effect of matters that come to their attention up to the date of their report;

iv) the timing of the work to be carried out by the responding professional and the date of their report; and

v) any questions relating to the responding professional's work.

15. The responding professional would provide a written response to the inquiring professional that would:

a) confirm the expectation that they are available to perform the work that the inquiring professional intends to use;

b) confirm that they have been appointed by law or engaged by the shareholders, policyholders, directors, or management to perform the underlying engagement;

c) confirm that they are a professional in good standing;

d) confirm that they are qualified to perform the work that the inquiring professional intends to use (including having the certifications or designations, if any, required for particular areas of practice);

e) confirm that the underlying engagement would be carried out in accordance with the applicable professional standards;

f) confirm awareness of the inquiring professional's intended use of their work, including, if applicable, the awareness of the inquiring professional's intended use of the responding professional's work or name in communications with third parties; and

g) discuss any problems expected in meeting the needs of the inquiring professional on a timely basis.

The responding professional's qualifications, competence and integrity

16. In the case of an auditor, prima facie evidence of professional qualification is membership in good standing in a professional accounting body. In the case of an actuary, prima facie evidence of professional qualification is fellowship in good standing in the Canadian Institute of Actuaries.

17. When the responding professional is not well known to the inquiring professional, the inquiring professional may obtain information regarding the responding professional's reputation for competence and integrity by consulting with others who are familiar with the responding professional's work.

The responding professional's findings

18. The responding professional's written response to the inquiring professional after completion of the work would:

    a) identify the responding professional's relationship to the entity to which the financial statements or data pertain;

    b) identify the financial statements or data to which the work relates;

    c) describe the work in the context of the underlying engagement;

    d) describe the inquiring professional's request and include or refer to the work performed as agreed with the inquiring professional;

    e) for auditors, state that the work provided to the actuary does not constitute an assurance engagement and accordingly, the auditor does not express an opinion or an assurance conclusion specifically on the data to which the work relates;

    f) inform the inquiring professional not to quote or refer to the work in communications or provide the work, in whole or in part, to parties other than the ones the inquiring professional previously identified to the responding professional without the responding professional's prior written consent; and

    g) when appropriate, include a copy of the report on the underlying engagement.

19. The Appendix provides examples of the responding professional's written response to the inquiring professional.

20. When the inquiring professional has a question about an aspect of the responding professional's work, the question would be raised with the responding professional who would provide a reasonable explanation about that aspect of their work. This does not, however, restrict the inquiring professional from obtaining information or explanation that may be required in the performance of their duties in accordance with the applicable professional standards.

Disclosure of respective responsibilities to the readers of financial statements

21. When required by law or regulation, a description of the respective responsibilities of the auditor and of the actuary involved in the preparation of the financial statements would accompany the financial statements.

Appendix

Illustration 1: Example of an auditor's written response to the actuary

The following is an example of an auditor's written response to the actuary after the auditor has completed the work requested by the actuary. This example is intended only to be a guide and will need to be adapted according to the circumstances.

[Actuary or another appropriate addressee]

[Date]

We are responding to your request to use our work in accordance with the Joint Policy Statement Concerning Communications between Actuaries Involved in the Preparation of Financial Statements and Auditors ("Joint Policy Statement").

We are engaged to audit the financial statements of XYZ Company Limited for the year ended December 31, 20X1. The work we provide to you relates to [describe the data to which the work relates such as the auditor's procedures on the data integrity of the accounting system]. [Describe the work in the context of the underlying engagement such as we performed this work as part of our audit of the financial statements.]

As requested by you under the Joint Policy Statement, we are providing you with [brief description of the actuary's request]:

[Include or refer to the work performed as agreed with the actuary.]

This work does not constitute an assurance engagement and accordingly, we do not express an audit opinion or an assurance conclusion specifically on [the data to which the work relates].

Please do not quote or refer to our work in communications or provide our work, in whole or in part, to parties other than the ones you have identified to us without our prior written consent.

[When appropriate, include a copy of the auditor's report.]

Yours truly,

[Auditor's signature]

Illustration 2: Example of an actuary's written response to the auditor

The following is an example of an actuary's written response to the auditor after the actuary has completed the work requested by the auditor. This example is intended only to be a guide and will need to be adapted according to the circumstances.

[Auditor or another appropriate addressee]

[Date]

We are responding to your request to use our work in accordance with the Joint Policy Statement Concerning Communications between Actuaries Involved in the Preparation of Financial Statements and Auditors ("Joint Policy Statement").

We are engaged to [describe relationship with the entity such as to provide actuarial opinions on the (policyholder) liabilities in the financial statements of XYZ Company Limited for the year ended December 31, 20X1.] The work we provide to you relates to [describe the financial statement or data to which the work relates such as an actuarial opinion on whether the liabilities of $123 billion in the Statement of Financial Position are calculated in accordance with accepted actuarial practice]. [Describe the work in the context of the underlying engagement such as this work is one of several actuarial opinions we are providing on the (policyholder) liabilities.]

As requested by you under the Joint Policy Statement, we are providing you with [brief description of the auditor's request]:

[Include or refer to the work performed as agreed with the auditor.]

Please do not quote or refer to our work in communications or provide our work, in whole or in part, to parties other than the ones you have identified to us without our prior written consent.

[When appropriate, include a copy of the actuary's report.]

Yours truly,

[Actuary's signature]

1530 Review or repeat of another actuary's work

.00 The standards in this subsection 1530 apply to a review engagement that is at the instigation of a user. They do not apply to quality control in the first actuary's firm or employer, even if the reviewer is external to the first actuary's firm or employer. The standards for a review engagement also apply, mutatis mutandis, to a repeat engagement.

.01 In this subsection 1530,

- "first actuary" means an actuary whose work is reviewed or repeated,
- "review engagement" means an engagement to review the first actuary's work,
- "reviewer" means the actuary engaged to review or repeat the first actuary's work, and
- "repeat engagement" means an engagement to repeat all or part of the first actuary's work.

.02 Repealed

.03 If the terms of the first actuary's engagement so permit, then the first actuary should cooperate with the reviewer. [Effective February 1, 2018]

.04 If the terms of the review engagement so permit, then the reviewer should, as soon as practical, discuss the review with the first actuary (unless the reviewer's agreement with the first actuary's work makes such discussion superfluous), and should attempt to resolve any difference between them. The reviewer should report the result of such discussion. [Effective February 1, 2018]

.05 If the reviewer reports disagreement with the first actuary's work but that work is within the range of accepted actuarial practice, then the reviewer should so report. [Effective February 1, 2018]

.06 If a limitation in time, information, data, or resources constrained the quality of the first actuary's work, then the reviewer should so report. [Effective February 1, 2018]

.07 If discussion between the two actuaries results in improvement to the first actuary's work or, in the case of periodic reporting, to the work expected for the subsequent report, then the reviewer should so report. [[Effective February 1, 2018]

.08 If the first actuary's work is not within the range of accepted actuarial practice, then the reviewer should so report. [Effective February 1, 2018]

.09 Repealed

Selection of reviewer

.10 The reviewer may be selected by a user of the first actuary's work or by the first actuary. The latter would not be appropriate if it gives rise to a potential conflict of interest (e.g., where the interests of the user and the first actuary's client or employer are opposed), but may otherwise be appropriate if it serves to

- facilitate compliance with this subsection 1530; and
- help assure selection of a qualified reviewer.

.11 In selecting a reviewer, the first actuary would take into consideration the user's objective for the review and would consult with the user as appropriate.

.12 If an actuary is qualified to perform the work of the first actuary, then that is prima facie evidence that the actuary is qualified to be the reviewer.

.13 The perceived objectivity of the reviewer is enhanced if the reviewer is independent of the first actuary.

Timing of the review

.14 The review may take place prior to the release of the first actuary's report ("pre-release review") or after such release ("post-release review"). A pre-release review provides the opportunity for the reviewer to suggest improvement to the work. A post-release review allows such improvement to be implemented only in future work and in some cases might require a withdrawal of the report and revision to the work.

.15 Repealed

Difference between the two actuaries

.16 If the reviewer identifies findings for a difference that is material, the reviewer would so report, along with an explanation of the reason for the difference.

.17 If the reviewer identifies findings for a difference that is not material, the reviewer would avoid reporting such a difference if it would lead to an unnecessary dispute with the first actuary. If the reviewer has access to different data, information, or resources, or has different time constraints than the first actuary had at the time of initial preparation of the report, then the reviewer would so report.

.18 If the reviewer believes that access to different data, information or resources would serve to reduce uncertainty in the interpretation of the work, then the reviewer would so report.

.19 Repealed

.20 Repealed

Appropriate review engagement

.21 The reviewer would consider the appropriateness of a review engagement that precludes discussion with the first actuary, especially if the first actuary will not be apprised that the review is to take place. Nevertheless, such an engagement may be an appropriate engagement, where, for example

- the interests of the first actuary's client or employer and the reviewer's client or employer are opposed, especially so in the case of actuarial evidence work involving litigation or mediation.
- the reviewer's client or employer is a judicial, legal or regulatory authority who is investigating the first actuary's conduct or the conduct of the first actuary's client or employer.
- the review is merely preliminary to a further review in which timely open discussion between the two actuaries will be possible.

.21.1 An engagement that limits or delays discussion between the two actuaries may be an appropriate engagement if the reviewer's client or employer wants to ensure that the two reports are independent of each other.

.22 In the case of actuarial evidence work involving litigation or mediation, the reviewer may be asked to report, without discussion with the first actuary,

- results based on assumptions which differ from those in the first actuary's report, or
- alternatives to the first actuary's reported results that are within the range of accepted actuarial practice.

Such an engagement would be an appropriate review engagement.

.23 Repealed

Repeat engagement

.24 A repeat engagement would be an appropriate engagement if its purpose is to identify or reduce uncertainty in the interpretation of the first actuary's work.

.25 If the second actuary knows or suspects that the engagement is a repeat engagement, then he or she would take into account the possibility that the client or employer is "opinion shopping" when determining if it is an appropriate engagement. Such an engagement may not be an appropriate engagement.

1600 Assumptions and Methods

1610 Methods

.01 The actuary should select a method that takes account of the circumstances affecting the work. [Effective February 1, 2018]

.02 The basis for calculating actuarial estimates is comprised of a method and one or more assumptions. Methods represent the underlying manner in which actuarial calculations are undertaken. Methods differ from one area of actuarial practice to another and have differed over time.

.03 In selecting an appropriate method, the actuary would consider whether any method is mandated by law, by practice-specific standards or by the terms of the engagement.

1620 Assumptions

.01 The actuary should identify and select each assumption that is needed for the work, except for those that are prescribed, that are mandated by law or that are stipulated by the terms of the engagement. [Effective February 1, 2018]

.02 The actuary should select an appropriate model or data assumption for a matter as the best estimate assumption relating to that matter, modified, if appropriate, to make provision for adverse deviations. In selecting an assumption, the actuary should take account of the circumstances affecting the work, past experience data, the relationship of past to expected future experience, anti-selection, and the relationship among matters. [Effective February 1, 2018]

.03 The appropriate assumption for a matter, other than a model or data assumption, should be continuation of the status quo, unless there is none or unless there is a reasonable expectation that it will change, and the actuary so reports. [Effective February 1, 2018]

.04 Throughout the standards, the word "calculation" appears, but not as a defined term. It can imply a mathematical operation as simple as adding two numbers or as complex as a scenario of financial condition testing. "Calculation" does not necessarily imply that a model is used. The word "calculation", when used in the context of a model, emphasizes the result of a model run and to a lesser extent model specification and model implementation.

.05 It may be useful, under the terms of the engagement, to report the result of two assumptions without opining on their relative appropriateness and to recommend that each user select that which meets his or her needs.

Model assumptions

.06 The model assumptions are quantitative assumptions in a model about

- Contingent events;
- Investment return and other economic matters, such as price and wage indices; and
- Numerical parameters of the environment, such as the income tax rate.

.07 There is a model assumption for each of the matters that the actuary's model takes into account. Those matters would be sufficiently comprehensive for the model reasonably to represent reality.

.08 A model, whether simple or complex, requires model assumptions. The model depends on the purpose of the work and the sensitivity of the model run to the various matters about which assumptions could be made. The actuary would strike a balance between the complexity needed for reasonable representation of reality and the simplicity needed for a practical calculation. If the model specification does not take into account a matter, the result is an implicit assumption about that matter, usually an assumption of zero probability or of zero rate. The actuary may compensate for an inappropriate implicit assumption regarding a matter that the model specification does not take into account by altering the explicit assumption regarding a matter that the model does take into account.

.09 For models with interrelated model assumptions, the actuary would consider the interaction between assumptions.

Data assumptions

.10 Data assumptions are the assumptions, if any, needed to relieve insufficiency or unreliability in the data.

.11 The available data may be not sufficient or not reliable. For example, files of pension plan members may lack the date of birth of the members' spouses. Based on sampling, or on comparison with comparable data, it may be appropriate to assume a relationship between spouse and member ages; for example, that a male spouse's date of birth is three years before the member's, and that a female spouse's date of birth is three years after the member's.

Assumptions other than model and data assumptions

.12 The assumptions other than model and data assumptions are the assumptions about the legal, economic, demographic, and social environment upon which the model and data assumptions depend.

.13 Such other assumptions are usually qualitative, dealing with the environment; for example,

- Legislation, like the Income Tax Act (Canada);
- Student education;
- The medical care system;
- Government social security systems; and
- International treaties.

.14 Those assumptions are needed to the extent that the model assumptions and, in some cases, the data assumptions depend upon them. Such assumptions are numerous and it is not practical to identify all of them.

.15 Continuation of the status quo is usually the appropriate assumption for other than model and data assumptions; for example, an assumption that the fund of a registered pension plan continues not to be taxed or that the capital markets remain more or less as they are. Users may infer that assumption except where the actuary reports otherwise. The actuary would report an assumption

- That is different from continuation of the status quo; and
- Regarding a matter for which there is no status quo, for example, a student's assumed occupation after completion of education.

Acceptable range

.16 There is a reasonable range of assumptions that may be selected by an actuary for particular work and that might produce materially different results. Sometimes, it is desirable that actuaries produce results within a relatively narrow range, in which case the practice-specific standards may prescribe certain methods and/or assumptions to achieve that purpose.

Circumstances affecting the work

.17 Knowledge of the circumstances affecting the work may require consultation with the persons responsible for the functions that affect experience. For example, if the calculation is to value the assets or liabilities of a benefits plan, the actuary would consult the persons responsible for investments, administration, and plan provisions. If the calculation is to value the policy liabilities of an insurer, the actuary would consult the officers responsible for investments, underwriting, claims, marketing, product design, policy dividends, and policy servicing.

.18 An assumption about a matter would take account of the circumstances affecting the work if those circumstances affect that matter. The circumstances affecting the work are relevant for experience in most matters other than economic matters.

Past experience data

.19 The available and pertinent past experience data are helpful in the selection of assumptions.

.20 Other things being the same, pertinent past experience data are data

- Relating to the case itself rather than to similar cases;
- Relating to the recent past rather than to the distant past;
- That are homogeneous rather than heterogeneous; and
- That are statistically credible.

These criteria may conflict with each other.

Expected future experience vs. past experience

.21 To extrapolate pertinent past experience and its trend to the near future is often, but not necessarily, appropriate.

.22 The appropriateness of the extrapolation depends on the matter assumed. For example, pertinent past mortality experience is a better indicator of the outlook than is pertinent past investment return experience.

.23 An extrapolation would take account of a change that affects the outlook. For example,

- Adoption of a subsidized early retirement option in a pension plan may affect retirement rates;
- A change in an issuer's case estimate practices may affect its claims development;
- An issuer's discontinuance of a line of business may affect its expense rates allocable to the remaining lines; and
- A change in judicial practice may affect the settlement of claims.

Anti-selection

.24 Each assumption would normally take account of potential anti-selection.

.25 One party in a relationship may have the right (or the administration of the relationship may give the privilege) to exercise certain options. That party may be, for example, a policyholder, a benefits plan's member, a borrower, a lender, or a shareholder.

.26 Examples are the right or privilege of a

- Pension plan member to select his or her retirement date when the pensions at various retirement ages are not actuarially equivalent;
- Policyholder to renew term life insurance at its expiry for a stipulated premium;
- Mortgagor to prepay principal, or an issuer to call a bond or redeem a preferred share; and
- Shareholder to retract a share.

.27 When considering a single relationship, it is reasonable to expect that party to exercise those options to the detriment of the other party in the relationship if it is to the first party's advantage to do so. However, where a number of such relationships are concerned, such as a portfolio of policyholders or members of a benefit plan, it may not be reasonable to assume that every one of these would exercise such an option in that manner.

.28 The extent of anti-selection depends on

- The size of the advantage from each exercise of the option (for example, anti-selection is dampened if the advantage to each policyholder is small even when the aggregate potential detriment to an issuer is large);
- The concomitance of exercise of the option (for example, election of a favourable early retirement pension may force the plan member into unwanted unemployment, or a policyholder (who is also the life insured) in ill health may be unable to afford to continue an insurance policy with a low premium);
- The policyholder's or plan member's difficulty in making the required judgment (for example, everyone knows his or her age, but a person may be unable to gauge the effect of ill health on longevity); and
- The sophistication of the policyholder, plan member, borrower, lender, or shareholder.

Independently reasonable and appropriate in the aggregate

.29 The assumptions that the actuary selects or for which the actuary takes responsibility, other than alternative assumptions selected for the purpose of sensitivity testing, would be independently reasonable and appropriate in the aggregate.

.30 The actuary would select independently reasonable assumptions. The following is an example:

- For a typical defined benefit pension plan valuation, the actuary would adopt an explicit investment assumption, as well as an explicit expense assumption rather than using implicit assumptions incorporated within a net discount rate. However, for a small defined benefit pension plan, the actuary may choose to use approximations for the investment expenses.

.31 The actuary would avoid the use of independently reasonable assumptions that are inconsistent or biased in the same direction, either of which might result in the assumptions not being reasonable in the aggregate. If an assumption is prescribed, is mandated by law or is stipulated by the terms of the engagement, it would not be appropriate to compensate for this prescription or stipulation by modifying other assumptions. The remaining assumptions would be reasonable in the aggregate and to the extent possible be independently reasonable.

.32 The use of independently reasonable assumptions implies that each assumption is explicitly defined. However, there would be no requirement to use explicit assumptions in the model specification, as long as the result of using that model does not produce a material error. For example, for pension valuations, use of a discount rate net of expenses may produce a value very close to the value obtained by using explicit assumptions. In this case, the actuary would disclose both the gross investment rate assumption and the expense assumption.

Stipulated or mandated assumptions

.33 Use of an assumption stipulated by the terms of the engagement is use of the work of another person.

.34 If the assumption is mandated by law and an amendment to the law is virtually definitive, it may be useful to report a result that reflects the amendment.

Discount rate

.35 The use of a discount rate is inherent in the actuarial present value method. The discount rate may be constant or it may vary over time. In selecting the best estimate assumption for the discount rate, the actuary, consistent with the circumstances affecting the work, may either

- Take into account the expected investment returns of the assets that support the liabilities; or
- Reflect interest rates on relevant fixed income reference securities.

.36 In selecting the best estimate assumption for the discount rate, the actuary, consistent with the circumstances affecting the work, may assume that the yields on fixed income investments at future dates, either

- Remain at levels applicable at the calculation date; or
- Revert in the long term to expected levels.

1630 Provision for adverse deviations

.01 The actuary should include a provision for adverse deviations in calculations only to the extent required by the terms of the actuary's engagement or as mandated by law or as prescribed by practice-specific standards. [Effective February 1, 2018]

1640 Comparison of current and prior assumptions

.01 Unless the actuary reports the inconsistency, the assumptions for a calculation for a periodic report should be consistent with those of the prior calculation. [Effective February 1, 2018]

.02 The definition of consistency for the purpose of this recommendation varies among practice areas. For example,

- For advice on funding a pension plan, the assumption at a calculation date is consistent with the corresponding assumption at the prior calculation date if the two are numerically the same; and
- For valuation of insurance contract liabilities for financial reporting, an assumption at a calculation date is consistent with the corresponding assumption at the prior calculation date if the two assumptions
    - Each reflect the conditions and outlook at their respective calculation dates consistent with the circumstances affecting the work in the case of a best estimate assumption;

- Each reflect the risks at their respective calculation dates consistent with the circumstances affecting the work in the case of a margin for adverse deviations; and
- Are located at the same point within the range of accepted actuarial practice.

.03 If the assumptions are not so consistent, the actuary would report the inconsistency. If practical, useful and appropriate under the terms of the engagement, the report would quantify the effect of the inconsistency.

1700 Reporting

1710 Reporting: external user report

.01 In an external user report, the actuary should

- Identify the client or employer;
- Describe the work, its purpose, and its users;
- Say that use of the report may not be suitable for another purpose;
- Say whether or not the work is in accordance with accepted actuarial practice in Canada and, if not, disclose the deviation from that practice;
- If useful, disclose any unusual application of accepted actuarial practice;
- If the report is supported by the use of a model, disclose limitations in the model relevant to the intended purpose;
- Disclose any aspect of the work for which the actuary does not take responsibility;
- Describe each assumption used for the work that is material to the results of the work, including the extent of any margin for adverse deviations included with respect to each such assumption;
- Provide the rationale for each such assumption that is material to the results of the work;
- For matters requiring an assumption other than a model or data assumption, disclose any assumption that is different from assumption of continuance of the status quo and, if practical, useful, and appropriate under the terms of the engagement, disclose the effect of alternative assumptions;
- Describe the methods used for the work;
- In the case of a periodic report, disclose any inconsistency between the assumptions and methods of the current and prior reports and the rationale for such inconsistency;
- Describe any subsequent event that is not taken into account in the work;
- Disclose any reservation;
- Express an opinion on the assumptions and methods used for the work;
- Express an opinion on the results of the work;
- Identify himself or herself and sign the report; and
- Date the report. [Effective February 1, 2018]

.02 Any description or disclosure may be in material referred to in the report and either accompany the report or plausibly be available to users. [Effective February 1, 2018]

.03 Subsequently, the actuary should respond to a user's request for explanation except if that is contrary to the terms of the engagement. [Effective February 1, 2018]

.04 Subsequently, the actuary should withdraw or amend the report if information comes to hand after the report date that invalidates the report. [Effective February 1, 2018]

.05 A duty of confidentiality in an appropriate engagement supersedes any of the foregoing portions of this recommendation with which it conflicts. [Effective February 1, 2018]

Description and disclosure in general

.06 The range of appropriate reports is relatively narrow for external user reports as compared to that for internal user reports. An external user report would be relatively formal and detailed when the actuary does not communicate directly with users or when the interests of an external user and of the actuary's client or employer are not the same.

.07 Appropriate description and disclosure in a report strike a balance between too little and too much. Too little disclosure deprives the user of needed information. Too much disclosure may exaggerate the importance of minor matters, imply a diminution of the actuary's responsibility for the work, or make the report hard to read.

.08 The appropriate criterion for description and disclosure is the question, "What qualitative and quantitative information best serves the user's understanding and decision-making?" The question, "What information does the user want?", is an insufficient criterion because the circumstances affecting the work may make the actuary aware of information needs of which the user is unaware.

.09 The actuary would consider and address the sensitivity of the results of the work to variations in key assumptions where practical, useful, and consistent with the terms of the engagement.

.10 Disclosure need not necessarily be in the report itself except if its importance so warrants or if it cannot be referenced in material available to users. Disclosure in a short report may place undue emphasis on the information disclosed.

.11 An unintended reservation misleads the user if it implies either that there was a deviation from accepted actuarial practice or that the actuary does not take full responsibility for the work. The following are examples.

- Approximation is a usual part of work. Even a moderately complex calculation may involve many approximations. Disclosure of an appropriate approximation may mislead the user by implying that the actuary's work falls short of accepted actuarial practice.
- Use of another person's work is also a usual part of work. If the actuary does not take responsibility for the used work, disclosure is appropriate. Disclosure if the actuary does take responsibility for the used work may mislead the user.
- Deviation from a particular recommendation or other guidance in the standards when the result of doing so is not material is also a usual part of work and its disclosure is undesirable.

The work, its purpose, and its users

.12 Description of the work usually includes the calculation date and the numerical result. If the work is mandated by law, citation of the law is useful.

.13 The amount of detail depends mainly on the needs of users. A separate report may be desirable for a particular user (usually a regulator) whose desire for detail significantly exceeds that of other users.

.14 Description of the purpose of the work and its users permits another person to assess its appropriateness to his or her needs and may thereby avoid unintended use of the work.

.15 The users comprise the addressee(s) of the report, and any others explicitly identified in the report. Where a report has more than one user, the actuary would have regard to the information of value to each user in determining appropriate disclosure.

Accepted actuarial practice

.16 If the work is in accordance with accepted actuarial practice, a simple statement to that effect is a powerful statement, and reassuring even to a user with a limited understanding of what constitutes accepted actuarial practice. If the work is not in accordance with accepted actuarial practice, a statement that it is, except for specified deviations, is a concise description.

.17 Any deviation from accepted actuarial practice would result from either conflict with law or conflict with the terms of an appropriate engagement.

.18 For work in Canada, the actuary would refer to "accepted actuarial practice for work in Canada", or use other language of equivalent meaning and clarity.

.19 For work outside of Canada, the actuary may choose to refer to

- "Accepted actuarial practice for work in [country]", if the guidance of a foreign jurisdiction has been applied to the work;
- "Internationally accepted actuarial practice", if the guidance of the International Actuarial Association has been applied to the work; or
- "Accepted actuarial practice for work in Canada", if Canadian guidance has been applied to the work because of the absence of applicable foreign guidance.

Unusual application of accepted actuarial practice

.20 The actuary would not usually report a deviation from a particular recommendation or other guidance in these standards as a result of an unusual or unforeseen situation.

.21 If, as is common, accepted actuarial practice for an aspect of the work encompasses a range, the actuary usually reports the work as being in accordance with accepted actuarial practice without drawing particular attention to his or her selection within the range. Disclosure of the selection, and of the reason for selecting it, is appropriate, however, if it is

- Mandated by law or specified by the terms of the actuary's engagement;
- Excluded from the accepted range by an exposure draft or by approved, but not yet effective, new standards;
- Inconsistent with the corresponding assumption of a prior periodic report;
- Dependent on a special permissive feature in the law for its acceptability; or
- Unusual or controversial.

Limitation to actuary's responsibility

.22 Any diminution of the actuary's responsibility for the work as a result of an engagement whose terms call for a deviation from accepted actuarial practice would be disclosed.

Disclosure of assumptions

.23 Where an assumption or method is mandated by law, the actuary would, if relevant, disclose that use of the report, based on the mandated assumption or method, may not be appropriate for purposes other than that for which the report was prepared.

Subsequent event not taken into account in the work

.24 An example of a subsequent event not taken into account in the work is a non-retroactive increase in the benefits of a pension plan for which the actuary is advising on funding. The actuary would describe the increase, report that it was not taken into account in the current advice on funding but that it will be taken into account in future advice. If useful, the actuary would quantify its effect, for example, by reporting the pro forma effect on the recommended funding if the benefit increase were effective immediately before the calculation date.

Reservations

.25 A report with reservation may be unavoidable in certain circumstances, such as the following:

- The actuary was obliged to use the work of another person and has doubts about the appropriateness of so doing.
- The actuary was unable to arrive at a conclusion as to the sufficiency and reliability of the data.
- There was an undue limitation to the scope of the actuary's work. For example, the time, information, or resources contemplated by the terms of the engagement did not materialize.
- There is an unresolved conflict of interest.

.26 The actuary would report any remedy, underway or expected, to the problem causing the reservation.

.27 A serious reservation may call for consulting with another actuary or obtaining legal advice.

.28 Barring explicit disclosure to the contrary in the report, the user is entitled to assume that

- The work is in accordance with accepted actuarial practice and no reservation is required;
- The data are sufficient and reliable; and
- If a periodic report, the method is the same as that in the prior report and the assumptions are consistent with those in the prior report.

Use of models

.29 An external user report would rarely refer directly to a model. Disclosures related to a model are typically found in supporting documents. The report would contain a reference to a model if, for example, the actuary is required to do so by the engagement, the model has limitations relevant to the purpose of the engagement, or the actuary is unable to assess model risk.

.30 Explanation of the limitations of a model and the implications of those limitations would include descriptions of

- any relevant exclusions from the model, and
- simplifying assumptions made.

.31 If the actuary uses a model outside the domain of actuarial practice and is not able to verify the appropriateness of using such a model, the actuary would so report.

Opinion

.32 In giving an opinion on any matter in the report, the actuary would begin with "In my opinion..." which is a signal that the actuary is giving a formal, professional opinion.

.33 With respect to any assumption or method specified by the terms of the engagement, the actuary would

- If the actuary considers such assumption or method to fall within the range of accepted actuarial practice, opine that the assumption or method is appropriate;
- If the actuary considers such assumption or method to not fall within the range of accepted actuarial practice, report that the assumption or method is not in accordance with accepted actuarial practice and report that the assumption or method was specified by the terms of the engagement, as applicable;
- If the actuary is unable to easily determine whether the assumption or method falls within the range of accepted actuarial practice, report that the assumption or method may not be in accordance with accepted actuarial practice and report that the assumption or method was specified by the terms of the engagement, as applicable.

.34 It may be convenient to group the opinion statements in the external user report in a section with a heading such as Statement of Opinion that would be signed by the actuary.

Identification

.35 For work in Canada, the actuary would usually identify himself or herself simply as "Fellow, Canadian Institute of Actuaries" (or "FCIA" if users recognize the abbreviation), especially when Fellowship in the CIA is required or expected for the work.

Report date

.36 In reporting an opinion, the actuary would consider all available information up to the report date, including subsequent events if the report date is after the calculation date.

.37 The report date would usually be the date at which the actuary has substantially completed the work. The remaining effort may include peer review, typing and photocopying the report, and compilation of documentation.

.38 The date the actuary signs and delivers the report would be as soon thereafter as practical. If there is an unavoidably long delay, however, the actuary would consider any additional subsequent events that would result from a current report date.

.39 The actuary would issue the report within a reasonable time period with regard to the actuary's terms of engagement and the needs of the users of the report.

Withdrawal or amendment of a report

.40 After the report date, the actuary has no obligation to seek additional information that, if known at the report date, would have been reflected in the work, but, if additional information comes to hand, the actuary would consider if it affects the report. Additional information affects the report if it

- Reveals a data defect or a calculation error;
- Provides additional information about the entity that is the subject of the report as that entity was at the calculation date;
- Retroactively makes that entity different at the calculation date; or
- Makes that entity different after the calculation date and a purpose of the work was to report on the entity as it would be as a result of the information.

.41 Additional information may consist of both external information and internal discovery of an error in the work. Its classification is similar to the classification of subsequent events. That is, if the additional information results in the actuary determining that an event has occurred that would have to be taken into account in the data, assumptions, or methods for the work, it would affect the report. It does not affect the report if it makes the entity, which is the subject of the report, different after the calculation date and a purpose of the work is to report on the entity as it was at the calculation date; for example, if the additional information changes the outlook for the entity that would lead the actuary to select different assumptions at the next calculation date for a periodic report.

.42 If the additional information results in the actuary determining that an event has occurred that affects the report, the actuary would determine whether the event invalidates the report. If the actuary determines that the event does not invalidate the report, the actuary would consider whether to inform some or all of the users of the report about the event. If the actuary determines that the event invalidates the report, the actuary would withdraw or amend the report. If the actuary withdraws or amends a report, he or she would seek agreement with the client or employer on the notification to be given to users and on the preparation of an amended or replacement report in cases where there is no legal requirement to do so. Failing such agreement, the actuary would consider seeking legal advice on the discharge of his or her responsibilities, taking consideration of the fact that, to the extent practical and useful, all users should so be informed.

.43 The following examples are intended to assist actuaries in determining whether an event of which the actuary becomes aware after the report date may be worthy of disclosure to the users of the report or may require the report to be withdrawn or amended:

- If an event affects a report, but that report has been superseded by another report, typically no action would be taken with respect to the prior report;
- If an event materially affects the financial position, financial condition, or funded status of a pension plan, but does not materially affect the funding of the plan, it may be sufficient to disclose the event to the users of the report rather than withdraw or amend the report;
- If an event results in a situation where an assumption used in the work is obviously erroneous, but the assumption was reasonable at the report date, the actuary would typically not withdraw or amend the report, but would reflect the event in a subsequent report; and
- If an actuary has prepared a report that provides advice on the funding of a pension plan and, subsequent to the report date discovers an error in the report, and the funding recommendations contained in the report would change materially if the error were corrected, the actuary may determine that it is appropriate to withdraw or amend the report.

1720 Reporting: internal user report

.01 In the case of an internal user report, the actuary may appropriately abbreviate the recommendation for external user reports. [Effective February 1, 2018]

.02 The range of appropriate reports is wider for internal user reports than for external user reports. At one end of the range, a formal internal user report may differ little from an external user report. At the other end of the range, an informal, abbreviated, even oral, report may suffice for a representative of the actuary's employer or client with whom the actuary communicates frequently and who is well-versed in the subject of the report. To abbreviate the standards for an internal user report is efficient for both the actuary and the user provided that complete and clear communication is not thereby compromised.

1730 Reporting: oral report

.01 Oral reporting, especially to an internal user, is both useful and inevitable in some situations. The disadvantage of oral reporting is that the actuary and user may have differing recollections of what was reported. It is therefore good practice to confirm an oral report in writing, especially when there is an external user, or to record it in documentation.

.02 Except for signature and report date, the standards are the same for both oral and written reports.

1740 Summary report

.01 Where required by practice-specific standards, the actuary should prepare a summary report. [Effective February 1, 2018]

.02 The practice-specific standards specify the language to be used in the summary report.

.03 The purpose of the summary report is to simplify the actuary's communication with users and may be incorporated in a report prepared by the actuary's employer or client; for example, the financial statements of an insurer, a pension plan or a public personal injury compensation plan. Such a report does not constitute an external user report.