Actuarial Standards Board
Conseil des normes actuarielles

Final Standards

Final Standards – Revisions to General Standards to Reflect the Use of Models

Actuarial Standards Board

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1000—General

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1100 Introduction

1110 Definitions

.01 Each term set over dotted underlining has the meaning given in this section and has its ordinary meaning otherwise (e.g., external user).

.02 Accepted actuarial practice is the manner of performing work in Canada in accordance with the Rules and these Standards of Practice. Standards of Practice are the responsibility of the Actuarial Standards Board and approval of standards and changes to standards is made through a process that involves consultation with the actuarial profession and other interested parties. Unless the context requires otherwise, references to accepted actuarial practice refer to accepted actuarial practice for work in Canada. [*pratique actuarielle reconnue*]

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

.03.1 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*]

.04 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 contingent events. [*méthode de la valeur actuarielle*]

.04.1 Actuary, as it is used in these standards, means anyone bound by these standards for work in Canada. [*actuaire*]

.05 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*]

.06 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*]

.07 Appropriate engagement is one that does not impair the actuary's ability to conform to the rules. [*mandat approprié*]

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

.09 Best estimate means without bias, neither conservative nor unconservative. [*meilleure estimation*]

.09.1 Bylaws means the bylaws of the Canadian Institute of Actuaries, as amended from time to time. [*Statuts administratifs*]

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

.11 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*]

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

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

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

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

.15.01 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*]

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

.15.2 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*]

.16 Definitive means permanent and final. [*décision définitive*]

.17 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*]

.18 Domain of actuarial practice is the measurement of the current financial implications of future contingent events. [*domaine de la pratique actuarielle*]

.19 Early implementation means the implementation of new standards before their effective date. [*mise en œuvre anticipée*]

.20 Earnings-related benefit is a benefit whose amount depends on the recipient's earnings. [*régime salaire de carrière*]

.21 External user is a user who is not an internal user. [*utilisateur externe*]

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

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

.24 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*]

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

.25.1 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 or post-employment benefit plan. [*niveau de provisionnement*]

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

.27 Indexed benefit is a benefit whose amount depends on the movement of an index like the Consumer Price Index. [*prestation indexée*]

.27.01 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*]

.27.1 Insurance contract is a contract under which one party (the insurer) 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.[1] [*contrat d'assurance*]

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[1] The wording of the first sentence of this definition is identical to the corresponding definition appearing in IFRS 4 Appendix A, as of November 2009. The second sentence is explanatory and not part of that definition.

.27.2 Insurance contract 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 insurance contracts, including commitments, which are in force at that date or which were in force before that date. [*passif des contrats d'assurance*]

.28 Insurer is the party that has an obligation under an insurance contract to compensate a policyholder if an insured event occurs. Insurer includes a fraternal benefit society and the Canadian branch of a foreign insurer, but does not include a public personal injury compensation plan.[1] [*assureur*]

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

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

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

.31.1 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*]

.31.2 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*]

.31.3 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*]

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

.31.5 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*]

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

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

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

.35 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, which are in force at that date or which 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*]

.35.1 Policyholder is a party that has a right to compensation under an insurance contract if an insured event occurs.[2] [*titulaire de police*]

.36 Practice committee means the committee or committees of the Canadian Institute of Actuaries, either standing or ad hoc, to which the Practice Council of the Canadian Institute of Actuaries has assigned responsibility for the practice area or areas to which particular Standards of Practice apply. [*commission de pratique*]

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

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

.38.1 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*]

.39 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*]

[2] The wording of this definition is identical to the corresponding definition appearing in IFRS 4 Appendix A, as of November 2009.

.40 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*]

.41 Recommendation means a recommendation in a box in these standards. Similarly for "recommend". [*recommandation*]

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

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

.43 Report date is the date on which the actuary completes the report on his or her work. It usually differs from the calculation date. [*date du rapport*]

.43.1 Reinsurance recoverables in an insurer's balance sheet are the assets at the balance sheet date on account of reinsurance treaties, including commitments, which are in force at that date or which were in force before that date. [*sommes à recouvrer auprès des réassureurs*]

.44 Report pursuant to law is a report for which the law requires an actuary's opinion. [*rapport en vertu de la loi*]

.45 Rule means a rule in the Canadian Institute of Actuaries' Rules of Professional Conduct. [*règle*]

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

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

.48 Standard reporting language is standard language for an external user report. [*libellé du rapport type*]

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

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

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

.50 Use means use by the actuary, usually in the context of use of another person's work. [*utilisation*]

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

.52 Virtually definitive means to become definitive upon completion of one or more actions which are seen as formalities. [*pratiquement définitive*]

.53 Work means the actuary's work within the domain of actuarial practice and usually includes

acquisition of knowledge of the circumstances of the case,

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*]

1120 Interpretation

Recommendations

.01 These standards are binding on Fellows, Associates and Affiliates of the Canadian Institute of Actuaries for work in Canada and for members of bilateral organizations, as defined in the bylaws, when those members are practising in Canada.

.02 The standards consist of recommendations and other guidance.

.03 A recommendation is the highest order of guidance in the standards. Unless there is evidence to the contrary, there is a presumption that a deviation from a recommendation is a deviation from accepted actuarial practice.

.04 Each recommendation is in a box, followed by its effective date in square brackets.

Other guidance

.05 The other guidance supports and expands upon the recommendations. The other guidance consists of definitions, explanations, examples, and useful practices.

Effective date of recommendations

.06 The effective date is usually unrelated to the report date. A superseded recommendation may continue in effect if work is delayed. The notice of adoption would discuss such a case.

.07 The following four paragraphs (subject to the notice of adoption of new standards in a particular case) describe the application of the effective date to a recommendation in new standards.

.08 For work related to a fiscal period or periods, a recommendation applies if the first day of the fiscal period is on or after the recommendation's effective date. For example, a recommendation applies

> to work on financial statements if the accounting period of the financial statements begins on or after the recommendation's effective date,
>
> to advice on funding a benefits plan during periods which begin on or after the recommendation's effective date, and
>
> to dynamic capital adequacy testing if the opening day of the related forecasts is on or after the recommendation's effective date.

.09 For work related to an event, a recommendation applies if the date of the event is on or after the recommendation's effective date. For example, a recommendation applies

> to work on the wind-up of a benefits plan if the wind-up is effective on or after the recommendation's effective date, and
>
> to work on the transfer of policies from one insurer to another if the transfer is effective on or after the recommendation's effective date.

.10 For calculation of a capitalized value, a recommendation applies if the calculation date is on or after the recommendation's effective date. Examples are the capitalized value of pension plan benefits for a marriage breakdown or a commuted value payable upon termination of membership in a pension plan.

.11 For other work, a recommendation applies if the report date is on or after the recommendation's effective date.

General standards and practice-specific standards

.12 The 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.

.13 Usually, the intent of the practice-specific standards is to narrow the range of practice considered acceptable under the general standards. For example, the practice-specific standards for selection of a margin for adverse deviations for valuation of the insurance contract liabilities of an insurer narrow the range of practice which would be acceptable under the corresponding general standards.

.14 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 a description for the exception.

Drafting

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

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

.17 "May" is a permissive word, appearing in both recommendations and the text, often in the expression, "The actuary may…" and often with conditions attached. It defines a safe harbour. For example: in paragraph 1610.01, the recommendation is that "The actuary may use and take responsibility for another person's work if such actions are justified." and the text describes steps which 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.

.18 Repealed

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

Lay readers of the standards

.20 The standards are drafted as much as possible in ordinary business terminology rather than technical actuarial terminology, so that non-actuaries familiar with business terminology may understand them. For example, the standards refer to "insurance contract liabilities" rather than to "reserves" because, in financial reporting, "reserve" can mean an appropriation of surplus rather than a liability.

1130 Judgment

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

the spirit and intent of the standards,

the Canadian Institute of Actuaries' Guiding Principle No. 1,

the rules,

common sense, and

constraints on time and resources. [Effective December 1, 2002]

Need for judgment

.02 While the 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 need for judgment is so pervasive that its continual mention is impractical, and so is understood in the drafting. Here are three examples of how recommendations are drafted and how they are to be understood:

> Drafted: "Deviation from a particular recommendation or other guidance in the standards is accepted actuarial practice if the effect of doing so is not material."
>
> Understood: "Deviation from a particular recommendation or other guidance in the standards is accepted actuarial practice if, in the actuary's judgment, the effect of doing so is not material."
>
> Drafted: "The actuary may use and take responsibility for the work of another person if such actions are justified."
>
> Understood: "The actuary may use and take responsibility for the work of another person if the actuary is reasonably satisfied that such actions are justified."
>
> Drafted: "When working with respect to an entity, the actuary should have knowledge of the circumstances of the case which is needed for the work."
>
> Understood: "When working with respect to an entity, the actuary should have reasonable knowledge of the circumstances of the case which is needed for the work."

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

.05 A judgment which 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.

Spirit and intent

.06 An actuary who has a question about the standards in a particular case can sometimes answer the question by

> considering the Canadian Institute of Actuaries' Guiding Principle No. 1 ("In carrying on its activities and programs, the Institute holds the duty of the profession to the public above the needs of the profession and its members"),
>
> considering the rules, especially Rule 1 (Professional Integrity) ("A member shall act honestly, with integrity and competence, and in a manner to fulfil the profession's responsibility to the public and to uphold the reputation of the actuarial profession."), and
>
> posing the question, "If I had to defend my work to my peers, could I persuade them that I had sound reasons underlying my judgment?"

.07 An actuary who has a question about the spirit and intent of the Standards of Practice in a particular case may also consult in confidence with the chairperson or vice-chairperson of the Practice Council of the Canadian Institute of Actuaries or of an appropriate practice committee.

.08 An actuary who has a question about the spirit and intent of the Standards of Practice in a particular case may also consult another actuary. It is expected that the other actuary will, as a professional courtesy, offer reasonable assistance. Such consultation would be made with consideration to Rule 13 (Collateral Obligations).

Guiding Principle No. 1, rules, and common sense

.09 A strained interpretation of a rule or recommendation is inappropriate.

.10 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.

.11 Certain recommendations call for the actuary to obtain information relevant to the circumstances of the case; for example: see subsections 1450 and 1520, and paragraph 1730.06.

.12 The actuary would conform to the "integrity", and "skill and care" requirements of Rule 1 (Professional Integrity) by making a reasonable effort to obtain that information. The actuary is not responsible if that effort fails because the information is obscure or is withheld.

Constraint on time and resources

.13 The actuary would normally conduct work in compliance with accepted actuarial practice. In some circumstances within the scope of an appropriate engagement, however, 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.

1200 Application

1210 Accepted actuarial practice

.01 The actuary 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 December 1, 2002]

.02 The rules and the 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,

actuarial principles,

exposure drafts,

historical records, and

Canadian and international actuarial literature.

.03 Their applicability and their relative importance in a particular case is a matter for judgment, but

the rules are the Canadian Institute of Actuaries' highest order of guidance,

deviation from the rules is professional misconduct, and

there is a presumption that a deviation from a recommendation is a breach of accepted actuarial practice, so that the onus for justification of that deviation is on the actuary.

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

.05 The actuary usually reports having done his or her work in accordance with accepted actuarial practice in Canada, which is the norm and which, in the absence of disclosure of a deviation, is the expectation of users of actuaries' work. The permitted deviations are for conflict with law and with the terms of an appropriate engagement.

1220 Educational notes

.01 The actuary should be familiar with relevant Educational Notes and other designated educational material. [Effective December 1, 2002]

.02 Educational Notes and other designated educational material describe but do not recommend practice in illustrative situations.

.03 A practice that the Educational Notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation.

.04 The Educational Notes are intended to illustrate the application (but not necessarily the only application) of the standards, so there should be no conflict between them. By comparison, research papers and task force reports may or may not be in compliance with the standards. In any case, the Educational Notes are not binding.

1230 Scope

.01 The standards apply to work in Canada.

.02 The application of any recommendations beyond their scope should take account of relevant circumstances. [Effective December 1, 2002]

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. Here are examples for financial reporting, taxation, and litigation:

> If the work relates to financial reporting in accordance with U.S. generally accepted accounting principles, then the work is work in the U.S.A. Thus, 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.A.
>
> If the work relates to taxation under the U.S. *Internal Revenue Code*, then the work is work in the U.S.A. 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.A.
>
> If the work relates to litigation under U.S. law before a U.S. court, then the work is work in the U.S.A. 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.A.

.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 actuarial practice for work in that country. This encompasses the formal guidance, analogous to the rules and standards, which the actuarial profession in that country gives to its members. An example is the standards of practice developed by the Board for Actuarial Standards of the Financial Reporting Council in the United Kingdom. If that guidance does not exist or is limited, then 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.

.07 In some cases, the applicability of foreign guidance to Canadian Institute of Actuaries members is formal. The Canadian Institute of Actuaries has reciprocal agreements with its counterpart professional organizations in certain other countries under which the Canadian Institute of Actuaries deems the formal guidance which the counterpart gives to its members to be applicable to Fellow(s), Associate(s) and Affiliate(s) of the Canadian Institute of Actuaries for work in that country. One of the purposes of the International Actuarial Association is to promote such reciprocal agreements.

.08 For example, for work in the U.S.A., Fellows, Associates and Affiliates of the Canadian Institute of Actuaries are bound by

> the Code of Professional Conduct of the American Academy of Actuaries,
>
> the Actuarial Standards of Practice and the Actuarial Practice Guidelines of the Actuarial Standards Board of the U.S.A., and
>
> the Qualification Standards of the American Academy of Actuaries.

Extension of scope

.09 The standards applicable to a particular situation do not necessarily provide useful guidance in a second, similar situation for which there are no standards. If they do provide useful guidance in the second situation, then the actuary would consider what modification is necessary in order to take account of the difference between the two situations.

.10 If the standards for the first situation are silent about the second situation, and if the actuary's work in the second situation is in accordance with those standards, appropriately modified, then the actuary would so report. If the standards for the first situation specifically exclude the second situation from their scope, and if it is, either by coincidence or convenience, appropriate for the actuary's work in the second situation to be in accordance with a modification of those standards, then the actuary would report the work without reference to those standards.

.11 For example, consider the practice-specific standards that apply to the work of the appointed actuary of an insurer.

> They include standards for valuation of the insurer's insurance contract liabilities. Those standards apply to the work of an appointed actuary. They also apply, under circumstances set out therein, to the work of an actuary, who is not an appointed actuary, who is responsible for the valuation of the insurance contract liabilities of an insurer.
>
> They also include standards for reporting an adverse condition that requires rectification. The standards explicitly exclude an actuary of an insurer who is not an appointed actuary from their scope because that actuary would not have the necessary authority and legal immunity. Extension of the scope of those standards would not be appropriate.

.12 Application of standards to work outside Canada is always an application beyond their scope, as the standards apply only to work in Canada. However, such applications may be appropriate when the local profession provides no guidance.

.13 Extension of the scope of the general standards is more likely to be appropriate than extension of the scope of the practice-specific standards.

1240 Associates

.01 "Associate" means a person enrolled as an associate of the Canadian Institute of Actuaries, pursuant to Section 5 of the bylaws.

.02 The Canadian Institute of Actuaries does not expect an Associate to take responsibility for work. An Associate doing so, however, is as accountable as an actuary for that work and may not plead limited qualification or inexperience as an extenuating circumstance for a breach of accepted actuarial practice. The standards therefore apply to that Associate, with "Associate" substituted for "actuary", but without any implication that the Associate is an actuary.

1300 Permitted Deviations

1310 Conflict with law

.01 If accepted actuarial practice conflicts with the law, then 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 July 1, 2011]

.02 On occasion, accepted actuarial practice may conflict with applicable law, in which case the law governs. For example,

> the amount required to fund a registered pension plan may exceed the amount which the *Income Tax Act* permits a contributor to contribute, or
>
> regulation may preclude the use of present values in valuing an insurer's insurance contract liabilities.

.03 If the law merely requires a practice, or limits practice to a range, that is within the range of accepted actuarial practice, then accepted actuarial practice does not conflict with the law.

.04 If accepted actuarial practice conflicts with a practice that the law permits, but does not require, and if the terms of the actuary's engagement call for that practice, then the actuary would be guided by the recommendation in subsection 1320, Conflict with terms of engagement.

.05 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.

.06 The actuary may report the result of applying accepted actuarial practice either qualitatively or quantitatively. A quantitative report provides better information but requires more work.

.07 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, then a verbal description of the result is better than no report.

.08 The usefulness of reporting the result may vary among users. The criterion of usefulness is, therefore, usefulness to any user.

1320 Conflict with terms of engagement

.01 If accepted actuarial practice conflicts with the terms of an appropriate engagement, then 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 July 1, 2011]

.02 The recommendation permits no deviation from the rules but may permit deviation from a particular recommendation or other guidance in the standards.

.03 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 benefits plan. Examples of such an engagement are situations where

> the actuary uses, but does not take responsibility for, the data, 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 a method or an assumption that is not in accordance with accepted actuarial practice.

.04 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 conflict with law, the actuary has no discretion; the law calls for a report by an actuary and stipulates the performance of one or more aspects of the needed work. 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.

.05 The practicality and usefulness of reporting a result in accordance with accepted actuarial practice are the same as for subsection 1310, Conflict with law.

1330 Unusual and unforeseen situations

.01 Deviation from a particular recommendation or other guidance in the standards is accepted actuarial practice for an unusual or unforeseen situation for which the standards are inappropriate. The actuary should disclose, in confidence, that situation to the chairperson or vice-chairperson of the appropriate practice committee or of the Practice Council of the Canadian Institute of Actuaries. [Effective July 1, 2011]

.02 An unusual or unforeseen situation could arise because it is neither practical nor useful to anticipate every situation when drafting the standards. Disclosure of such a situation gives the Actuarial Standards Board of Canada an opportunity to decide whether the standards need to be revised to cater to it, which results in better standards, or whether the situation is so exceptional that the standards cannot reasonably be expected to cater to it. The purpose of the recommended disclosure is not to decide whether or not the actuary's conduct was in accordance with accepted actuarial practice. The actuary may therefore make that disclosure in confidence, either before or after the event. It is not appropriate for the actuary to limit that disclosure to a report that the Canadian Institute of Actuaries may not see.

.03 Accepted actuarial practice evolves. The standards are not intended to inhibit research and discussion that contribute to that evolution. In an unusual or unforeseen situation, they may produce an inappropriate result and are therefore no substitute for sound judgment.

.04 The chairperson or vice-chairperson to whom the situation is disclosed would follow the procedures set out in Rule 13 (Collateral Obligations).

.05 Usually, the actuary would report without reservation when deviating from a particular recommendation or other guidance in the standards in accordance with this subsection 1330, but it may sometimes be appropriate to describe and justify the deviation in the report.

1340 Materiality

.01 Deviation from a particular recommendation or other guidance in the standards is accepted actuarial practice if the effect of so doing is not material. [Effective December 1, 2002]

.02 Judgment about materiality pervades virtually all work and affects the application of nearly all standards. The words "materiality" and "material" seldom appear in the standards, but are understood throughout them. For example, the recommendation that approximation is appropriate if it does not affect the result means that it does not materially affect the result.

.03 "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 materially 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.

.04 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 dynamic capital adequacy 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 benefits 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.

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

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

Calculation standards

.07 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 insurer 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.

.08 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, then 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.

.09 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

.10 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 benefits plan's members is not useful if that class was trivial at the previous valuation. Also, description of immaterial provisions of a benefits plan is not useful. To ignore the recommendation is accepted actuarial practice in that situation.

1400 The Engagement

1410 Accepting and continuing an engagement

.01 In accepting an engagement, the actuary should

agree on its terms with the client or employer,

be satisfied that it is an appropriate engagement, and

have reasonable assurance of time, resources, information, access to officers and staff, access to documentation, and the right to communicate information, as may be necessary for the work.

.02 The actuary should consider consultation with the predecessor actuary, if any, to determine whether there is any professional reason not to accept the engagement. The predecessor actuary should cooperate with the actuary who seeks to determine whether there is any professional reason not to accept the engagement.

.03 In performing the engagement, if the actuary becomes aware of information which, if known beforehand, would have been an impediment to acceptance of the engagement, then 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 December 1, 2002]

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 An appropriate engagement is one that does not impair the actuary's ability to conform to the rules and in particular to Rules 1 (Professional Integrity), 2 (Qualification Standards), 5 (Conflict of Interest), and 6 (Control of Work Product). An engagement that leads to deviation from any rule is not appropriate. An engagement that leads to deviation from a particular recommendation or other guidance in the standards and even to a deviation from accepted actuarial practice may be an appropriate engagement in the circumstances.

.06 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 which 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.

.07 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.

.08 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.

.09 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.

.10 Any duty of confidentiality would give way to a duty of disclosure if disclosure is required by law, or if disclosure is required in order to comply with the bylaws or rules.

.11 Whether an engagement is appropriate depends on the actuary as well as on the engagement. For example, an actuary would be in breach of the rules by accepting an engagement

> to be an insurer's appointed actuary without having the requisite special qualifications, experience, and knowledge, or
>
> that involves a conflict of interest that falls outside of the permitted scope of Rule 5 (Conflict of Interest).

Subsequent information

.12 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.

.13 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.

.14 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.

1420 Financial interest of the actuary

.01 The financial interest of the actuary should not influence the result of the actuary's work. [Effective December 1, 2002]

.02 The actuary's compensation for work may be fixed or may involve an incentive that is related to the result of the work. Examples of incentives are contingent fees and performance-related bonuses. Fixed compensation or an incentive that is related to efficient or timely performance of the work is not considered to be compensation that would influence the result of the actuary's work. This subsection 1420 would apply if the compensation depended on the result of the work; for example, a bonus based on an insurer's net income when the work is to value the insurer's policy liabilities. In that case, the actuary has a financial interest in the result of the work but would not permit that interest to affect the result. On the other hand, it is not inappropriate for the actuary's client in litigation to call on the actuary for calculations based on assumptions that favour its side of the litigation, given an appropriate engagement and given appropriate disclosure in the actuary's report.

.03 In some cases, it is useful to report the financial interest of the actuary in the result of the work. The practice-specific standards deal with those cases.

1430 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 methods or assumptions for the work. [Effective December 1, 2002]

.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 benefits 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 methods or assumptions 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 methods and assumptions. 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.

1440 General knowledge

.01 The actuary should have adequate knowledge of the conditions in the practice area in which he or she is working.

.01.1 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 he or she is working and the actuarial evidence practice area. [Effective December 31, 2013]

.02 The relevant conditions may include legislation, accounting, 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.

1450 Knowledge of the circumstances of the case

.01 The actuary should have adequate knowledge of the circumstances of the case on which he or she is working. [Effective December 1, 2002]

.02 The relevant knowledge for a corporate entity or benefits 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.

.03 In the case of a benefits 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.

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

.05 Additional conservatism in making a calculation is not a substitute for knowledge of the circumstances of the case.

1500 The Work

1510 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.

.02 If the actuary reports an appropriate approximation, then the report should avoid unintended reservation.

.03 If the appropriateness of an approximation is doubtful, then the actuary should report its use with reservation. [Effective December 1, 2002]

.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 the 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 of the case 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 which 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 benefits 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, then 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.

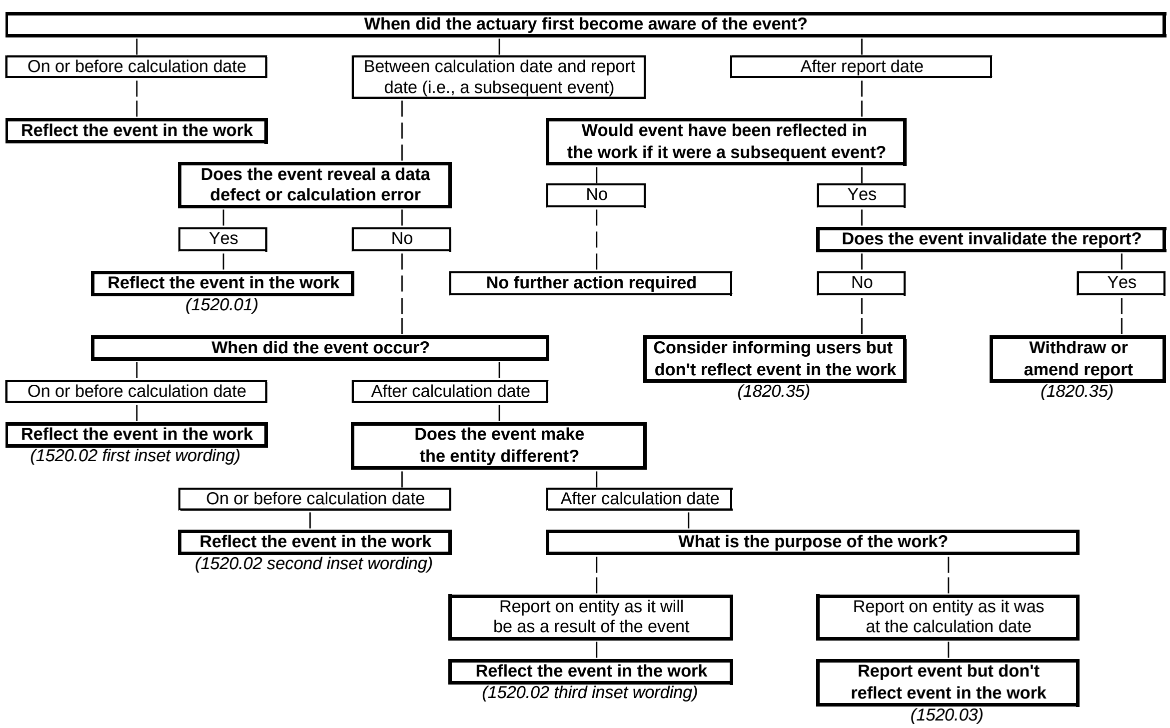
.14 If the actuary reports an implicit assumption used as an approximation, then he or she would also report the corresponding explicit assumption or assumptions. Similarly, if an actuary reports approximations for two offsetting assumptions that result in the same net effect as the underlying explicit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

1515 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



1520 Subsequent events

.01 The actuary should correct any data defect or calculation error that is revealed by a subsequent event.

.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.

.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 December 1, 2002]

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 which 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.

Definitive and virtually definitive decisions

.06 A definitive decision means a final and permanent decision that is not tentative, provisional, or unsettled. It would be evidenced by an amendment to a benefits plan, a collective bargaining agreement, a binding exchange of letters between two contracting parties, a court order, a legislative bill that has been proclaimed, or the like. A virtually definitive decision is one that is virtually certain to become definitive, 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.

Entity

.06.1 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 insurance company'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 to an insurer of a claim that was incurred on or before the balance sheet date, and

adoption of a pension plan amendment prior to the calculation date of which the actuary becomes aware after the calculation date.

.08 Repealed

.09 Repealed

.10 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.

.11 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.

.12 Repealed

Event makes entity different after

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

.14 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, then the actuary would take that event into account and would describe it in reporting.

.15 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, then 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

.16 The classification of a subsequent event may be unclear, at least a priori, although the circumstances of the case 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 accounting period.

a salary freeze for employees who are members of a pension plan. If the salary freeze is a correction of excessive salaries, then 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, then 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 which was not apparent until revealed by the default, then the default provides additional information about the entity as it was at the calculation date. If the default was precipitated by a catastrophe, then 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 which was not apparent until revealed by the insolvency, then the insolvency provides information about the entity as it was at the calculation date. If the insolvency was precipitated by a catastrophe, then it provides information about a change in conditions that makes the entity different after the calculation date.

.17 Repealed

Reporting

.18 Sometimes the actuary may consider it appropriate, or the terms of the work may require the actuary, to report an alternative and opposite calculation; i.e., an alternative calculation 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.

1530 Data

.01 If the actuary reports without reservation with respect to data, then the data should be sufficient and reliable for the work. If sufficient and reliable data are unobtainable but the defect in them does not negate the usefulness of the result, then the actuary should report a usual opinion with reservation in respect of data. If defects in the obtainable data preclude a useful result, then the actuary should so report or make no report. [Effective December 1, 2002]

.02 The work with respect to data consists of

identifying the data needed,

attempting to obtain them,

reviewing the data obtained, and

assessing sufficiency and reliability of the data obtained.

.03 If the actuary intends not to take responsibility for data, then the actuary would so report and would report any evident shortcomings in those data.

.04 The following are examples of the usual practice.

> For a calculation of a pension value in a marriage breakdown, the actuary usually does not take responsibility for data, such as the demographics of the pensioner and the terms of the pension plan. The actuary would usually accept the data supplied by counsel and repeat it in reporting.
>
> For advice in funding a pension plan, the actuary usually does not take responsibility for participant data and usually accepts, without taking responsibility for, the plan's financial statements and its investment data.
>
> For calculating the policy liabilities of an insurer, the actuary usually takes responsibility for all data.

.05 If the data, while usable, are not sufficient and reliable and the actuary's efforts to make them so are unsuccessful, the actuary would not take responsibility for the data and would report with reservation, even when it is usual to take responsibility for them.

Sufficiency and reliability

.06 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. Data are reliable if that information is accurate.

.07 The actuary would usually take responsibility for the sufficiency of the data. Whether the actuary takes responsibility for the reliability of the data depends on the engagement.

.08 If the ideal data are unobtainable at reasonable cost within the available time, then the actuary would consider what, if any, alternative data are sufficient and reliable.

.09 Work usually is both data-dependent, meaning that the quality of the result depends on the sufficiency and reliability of the data, and data-intensive, meaning that the data are both voluminous and detailed.

Obtaining data

.10 Usually, the actuary has neither custody of, nor control over, the data and uses data supplied by other persons. Usually, therefore, after identifying the needed data and attempting to obtain them, the actuary's task is not data creation but data validation, either personally or by using the work of other persons.

Reviewing data

.11 Items to consider in reviewing data are

the procedures for, the controls over, and the qualifications of the persons responsible for, their preparation and maintenance,

their internal consistency, their consistency with comparable prior period data, and their consistency with external comparable data, such as other files with common elements,

their consistency with the governing plan documents and policy forms, and

the availability of independent confirmation.

.12 If the user is able to validate the data, then the actuary may avoid validation by reporting the data. For example, in the case of an actuarial evidence report on the valuation of a disabled person's lost income, the reported data may be either agreed by the parties to the litigation or proved in court. Such avoidance of data validation is usually not practical when the work is data-intensive or has multiple users.

Assessing sufficiency and reliability of data

.13 The actuary who takes responsibility for the data would classify them as one of the following.

Sufficient and reliable, in which case the actuary reports an opinion without reservation on data. That does not imply that the data are perfect. Data are rarely perfect; especially when they are voluminous or complex.

Defective, but not so as to negate the usefulness of the result, in which case the actuary reports a usual opinion with reservation which describes the defect, describes the work done and assumptions made to cope with the defect, and, if practical, quantifies the effect of the defect on the result.

So defective as to preclude a useful result, in which case the actuary so reports or makes no report. If a report is useful or legally required, then the actuary would describe the defect, describe the work done and assumptions made to cope with the defect, quantify a result if practical, and explain that an opinion is not given because it is not possible to estimate the effect of the defect on the result. If a report is neither useful nor legally required, then the actuary would make none.

1535 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 which 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.

1540 Control

.01 Control procedures that detect errors and decrease the effect of errors should be performed for calculations. [Effective July 1, 2011]

.01.1 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]

.02 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 which 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.

.03 Examples of control procedures are procedures to assure that

all steps in the calculation are co-ordinated,

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.

.04 Examples of control tools are

random sampling,

spot checks, and

audit trails.

.05 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.

.06 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.

.07 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.

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

.09 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.

1550 Reasonableness of result

.01 The actuary should examine the reasonableness of a calculation's result. [Effective December 1, 2002]

.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 which checking of the calculation's steps does not reveal but which 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.

1560 Documentation

.01 The actuary should use his or her best efforts to compile and secure the retention of appropriate documentation.

.02 Where a successor actuary takes possession or control of documentation previously in the possession or control of a predecessor actuary, the successor actuary should use his or her best efforts to make such documentation available to the predecessor actuary, upon request by the predecessor actuary, if needed by the predecessor actuary to respond to queries about the related work.

.03 Where a successor actuary or an employer or client, acting on behalf of a successor actuary, requests access to documentation in the possession or control of a predecessor actuary, in order to carry on work, the predecessor actuary should use his or her best efforts to comply with the request. [Effective December 1, 2002]

.04 Documentation is an integral part of work that affects the application of nearly all standards.

.05 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 the actuary's compliance with accepted actuarial practice.

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

.07 An actuary who severs connection with a client or employer (for example, an actuary who retires or changes job) may seek to secure the retention of documentation of work for that client or employer by entrusting it to another actuary, who may be the successor actuary. Said other actuary would use his or her best efforts to make the documentation available to the predecessor actuary if his or her work is questioned or challenged.

.08 In some circumstances, documentation may not be in the possession or control of an actuary, or an actuary may be unable to release the documentation, particularly in cases involving the proprietary interests of a third party (including a client or employer). In the face of such difficulties, the actuary would consider seeking further advice.

.09 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.

.10 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.

.11 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.

1600 Another Person's Work

1610 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.

.02 If the actuary uses but does not take responsibility for another person's work, then the actuary should so report. [Effective December 1, 2002]

.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. Use of the work of outsiders raises questions. Is their work appropriate? Should the actuary take responsibility for it?

.04 To take responsibility for another person's work requires 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. The actuary would not take such responsibility if doing so constitutes unauthorized practice of the other person's profession, i.e., if doing so is in direct violation of statutes or laws governing who can practice the other person's profession, or 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.

.05 If the actuary does not take such responsibility, then 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.

.06 Whether or not the actuary takes responsibility for another person's work depends on the engagement and on the nature of the other person's work. Consider, for example, data supplied by another person.

> If the terms of the engagement call for it, then the actuary would take responsibility for data, which means that the actuary would audit the data supplied by another person. The audit would be as intense as needed for the actuary to take as much responsibility for the data as he or she would take for the calculations. Such an audit is never a small task when the data are voluminous or complex.

In other cases, it may be satisfactory if the actuary accepts and does not take responsibility for the data supplied by another person. That course avoids expense and saves time. That course would be satisfactory to the actuary's client or employer who supplies the data and who is comfortable with its sufficiency and reliability. Whether that course is satisfactory to another user of the actuary's work depends on whether that user has other assurance that the supplied data are sufficient and reliable. The actuary would report with reservation so that the limitation of his or her responsibility is disclosed.

The supplier of the data would usually be comfortable with their sufficiency and reliability.

Even when the actuary is not taking responsibility for the data, however, he or she would not accept supplied data blindly, but would make checks of reasonableness, if only to assure that the data had lost nothing in the transmission and that the actuary's understanding of the data is the same as the supplier's.

Use and take responsibility

.07 As long as doing so does not constitute unauthorized practice of another person's profession, the actuary may use and take responsibility for another person's work, given confidence that such actions are justified as a result of

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 Failing such confidence, the actuary would not take responsibility for the other person's work.

.09 The Canadian Institute of Actuaries encourages the actuary's use of auditor's work in accordance with the Joint Policy Statement of the Canadian Institute of Actuaries and the Canadian Institute of Chartered Accountants. The Joint Policy Statement also provides useful guidance if the actuary uses the work of a person other than an auditor.

.10 In the case of use of another actuary's work,

> identification of the differences between accepted actuarial practice in Canada and the practice which the other actuary followed if the other actuary worked outside of Canada, and
>
> review of the other actuary's working papers

may also be helpful.

.11 The actuary would not usually report use of another person's work if the actuary takes responsibility for that work. To do so may imply a reservation. If it is useful, the actuary may report both the use of, and taking responsibility for, another person's work.

Use but not take responsibility

.12 If the actuary uses but does not take responsibility for another person's work, then 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.

.13 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.

1620 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 Joint Policy Statement of the Canadian Institute of Actuaries and the Canadian Institute of Chartered Accountants. [Effective October 1, 2007]

1630 CIA/CICA Joint Policy Statement

The Canadian Institute of Actuaries and the Canadian Institute of Chartered Accountants agreed that each would incorporate the *Joint Policy Statement* in its standards of practice. Accordingly, the Joint Policy Statement is in the *CICA Handbook-Assurance* and in these standards of practice. Any change to the Agreement requires the consent of both Institutes. As a result, the style of this subsection differs somewhat from the style of the rest of the standards of practice.

Joint Policy Statement

concerning communications between actuaries

involved in the preparation of financial statements and auditors

This Joint Policy Statement effective October 1, 2007 has been approved by the Actuarial Standards Board of the Canadian Institute of Actuaries (CIA) and by the Auditing and Assurance Standards Board of The Canadian Institute of Chartered Accountants (CICA).

Purpose and application

1 The purpose of the Joint Policy Statement is to discuss:

a) communications between actuaries involved in the preparation of financial statements, and auditors, regarding their respective responsibilities;

b) how those actuaries and auditors 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 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. This Statement also applies when an actuary considers 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. This statement does not apply to communications with an auditor’s actuary or an external review actuary.

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 the best examples of when this Statement applies.

Definitions

4 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 independent 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 Auditing Standards in the CICA 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 an auditor who has been appointed to perform an audit and report on financial statements or to perform specified procedures on data;

d) "auditor's actuary" means an appropriately qualified actuary who assists the auditor in assessing risk and performing further audit procedures to respond to assessed risk;

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) "enquiring professional" means the actuary or the auditor, as the case may be, who is considering the work of the other;

g) "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;

h) “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.

i) “management” refers to any person(s) having authority and responsibility for planning, directing and controlling the activities of an enterprise;

j) “responding professional” means the actuary or the auditor, as the case may be, whose work is being considered by the other.

Responsibilities with respect to financial statements

5 The financial statements are the responsibility of management. The representations contained in the financial statements may include amounts determined by an actuary. In determining those amounts, the actuary is responsible for assessing the sufficiency and reliability of the data used in the valuation. The actuary may consider the work of an auditor with respect to data integrity and controls. In such cases, the actuary involved in the preparation of the financial statements acts as the enquiring professional and the auditor acts as the responding professional.

6 The auditor, on the other hand, has a responsibility to express an opinion on the fairness with which the financial statements present the financial position, results of operations and cash flows in accordance with the applicable financial reporting framework, which will normally be generally accepted accounting principles. When the financial statements include amounts determined by an actuary, the auditor considers the work of the actuary as part of the audit evidence supporting the actuarial valuation. In such cases, the auditor acts as the enquiring professional and the actuary involved in the preparation of the financial statements acts as the responding professional.

Considering the responding professional's work

7 The enquiring professional may consider the work of the responding professional provided that the enquiring professional takes reasonable care to determine that there is a basis for such consideration. This is done by communicating with the responding professional to establish an understanding of the work to be carried out by each and by considering:

a) the responding professional's appointment to do the work;

b) whether the responding professional has followed the standards of his or her profession in carrying out the work; and

c) the appropriateness of the responding professional's findings and opinion.

Communication between the two professionals

8 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.

9 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.

10 The enquiring professional would:

a) inform the responding professional of the intended consideration of his or her work in accordance with this Statement;

b) request confirmation from the responding professional that he or she has been engaged by the shareholders, policyholders, directors, or management to do the work that the enquiring professional intends to consider;

c) request confirmation from the responding professional that he or she is a professional in good standing;

d) request confirmation from the responding professional that he or she will carry out the work required in accordance with the applicable professional standards; and

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

i) the application of the concept of materiality to determine that the responding professional will be using a materiality level that is appropriate in relation to the enquiring professional's materiality level in accordance with applicable professional standards;

ii) subsequent events, to determine that the responding professional understands how they are to be treated and that he or she will consider the effect of matters that come to his or her attention up to the date of his or her report;

iii) the timing of the work to be carried out by the responding professional and the date of his or her report; and

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

11 The responding professional would provide a written response to the enquiring professional that would:

a) confirm the expectation that he or she is available to perform the work that the enquiring professional intends to consider;

b) confirm that he or she has been engaged by the shareholders, policyholders, directors, or management to do the work that the enquiring professional intends to consider;

c) confirm that he or she is a professional in good standing;

d) confirm that he or she is qualified to perform the work that the enquiring professional intends to consider (including having the certifications or designations, if any, required for particular areas of practice);

e) confirm that this work will be carried out in accordance with the applicable professional standards;

f) confirm awareness of the enquiring professional's intended consideration of his or her work; and

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

The responding professional's qualifications, competence, and integrity

12 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.

13 When the responding professional is not well known to the enquiring professional, the enquiring professional may obtain assurance as to 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

14 The responding professional's written response to the enquiring professional after completion of the work would:

a) identify the purpose of the work;

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

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

d) confirm awareness that the enquiring professional intends to consider the work in accordance with this Statement; and

e) when appropriate, include a copy of the report provided to the party who employed or engaged the responding professional that sets out the findings and, when applicable, opinions of the responding professional, including a representation that the work was performed in accordance with the applicable professional standards.

15 When the enquiring 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 his or her work. This does not, however, limit the right of the enquiring professional to any information or explanation that may be required in the performance of his or her duties in accordance with the applicable professional standards.

Disclosure of respective responsibilities to the readers of financial statements

16 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.

1640 Review or repeat of another actuary's work

.01 In this subsection 1640,

> "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 The standards in this subsection 1640 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 (sometimes referred to as "internal peer review" or "internal audit"), 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.

.03 If the terms of the first actuary's engagement so permit, then the first actuary should cooperate with the reviewer.

.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.

.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.

.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.

.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.

.08 If the first actuary's work is not within the range of accepted actuarial practice, then the reviewer should so report and should follow the procedures set out in Rule 13 (Collateral Obligations).

.09 A repeat engagement is an appropriate engagement if its purpose is to identify or reduce uncertainty in the matter on which the first actuary reported. [Effective July 1, 2011]

Applicable rules

.10 The rules affect a review engagement, in particular Rule 1 (Professional Integrity), on upholding the reputation of the profession; Rule 8 (Courtesy and Cooperation), on dealing with other actuaries; and Rule 13 (Collateral Obligations), on apparent material noncompliance by another member with the rules or Standards of Practice.

Selection of reviewer

.11 The reviewer may be engaged by a user of the first actuary's work or by the first actuary. The latter may not be appropriate if the interests of that user and the first actuary's client or employer are opposed, but otherwise has the merit of

facilitating compliance with this subsection 1640,

helping to assure selection of a qualified reviewer, and

avoiding unnecessary duplication by the reviewer of the first actuary's work.

.12 In selecting a reviewer or agreeing the terms of the engagement, then the first actuary would have regard to the user's objective for the review and would consult with the user as appropriate.

.13 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.

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

Terms of the engagement

.15 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. A post-release review would therefore be avoided unless the circumstances of the case require it.

.16 It is desirable that the terms of the engagement permit timely open discussion between the two actuaries. Such discussion

facilitates the review,

lessens the possibility of reviewer misunderstanding or of unwarranted damage to the first actuary's reputation,

reveals possible improvement to the first actuary's work, even if the work is in accordance with accepted actuarial practice, and

contributes to the professional development of both actuaries.

Difference between the two actuaries

.17 It is possible for two actuaries properly to arrive at different results. Avoidance of a dispute about a difference which is not material, or explanation of a difference which is material, serves users and helps to preserve the reputation of the profession.

.18 If the reviewer has access to different data, information, or resources, or has different time constraints, then the reviewer would so report.

.19 Insufficiency or unreliability in the data creates uncertainty for both actuaries and increases the likelihood of reviewer disagreement with the first actuary's work. If better data are likely to narrow the range of the disagreement, then the reviewer would so report.

.20 Discussion between the two actuaries is educational to both and may reveal possible improvements to the first actuary's work. The reviewer's report of those improvements assists the user to assess the utility of the review engagement. It may not be possible to identify those improvements that result from early discussion on matters which the first actuary had not yet decided.

.21 Review by a third actuary of the reviewer's tentative disagreement with the first actuary's work may help to put the difference between them in perspective. Depending on the extent of the difference and its implications for the users, the reviewer, the first actuary, or both of them together, may wish to consult, in confidence, with the chairperson or vice-chairperson of the Practice Council of the Canadian Institute of Actuaries or of an appropriate practice committee.

.22 Repealed

Review engagement which precludes discussion between the two actuaries

.23 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. The engagement may be an appropriate engagement, for example, where

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 the police or regulatory authorities who are 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.

discretion by the users of the reviewer's report is assured.

.24 For example, 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.

.25 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.

Repeat engagement

.26 In order to identify or reduce uncertainty, the first actuary's client or employer may ask a second actuary to repeat the first actuary's work. A repeat engagement usually requires more time and expense than a review engagement. The second actuary may or may not have knowledge of, or access to, the first actuary's work. 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.

1700 Assumptions

1710 Needed assumptions

.01 The needed assumptions for a model specification consist of model assumptions, data assumptions, and other assumptions. [Effective January 1, 2018]

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

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

.04 The other assumptions are the assumptions about the legal, economic, demographic, and social environment upon which the model and data assumptions depend. [Effective December 1, 2002]

.04.1 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 dynamic capital adequacy 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.

Model assumptions

.05 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.

.06 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, then 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 does not take into account by altering the explicit assumption regarding a matter that the model specification does take into account. For example, if the model specification takes account of investment return but does not take account of the risk of asset depreciation, the result, as just noted, is an implicit assumption of zero depreciation. To compensate, the actuary may assume a lower investment return rate.

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

Data assumptions

.07 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.

Other assumptions

.08 The other assumptions are usually qualitative, dealing with the environment; for example,

legislation, like the federal Income Tax Act,

student education,

the medical care system,

government social security systems, and

international treaties.

.09 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.

Needed assumptions

.10 Examples of matters about which assumptions may be needed are

Economic

discount rates to calculate present values,

investment return rates earned on the investment of positive cash flow or that affects the price at which assets are sold in order to meet negative cash flow,

investment return rates earned on assets that support liabilities,

risk of asset depreciation (C-1 risk),

risk of changes in the level or term structure of interest rates (C-3 risk),

rate of interest on member contributions to registered pension plans,

price and wage inflation rates,

compensation increases,

productivity rates,

number of hours worked by employees,

behaviour of indices to which benefits are linked,

rate of increase in maximum allowable pensions under a registered pension plan, and

trend rate (by type of benefit provided under the plan) – initial rate, ultimate rate and the number of years and grading pattern to reach the ultimate rate,

Social

family composition,

marital status,

age difference between spouses, and

judicial decisions in litigation,

Decrement

termination of coverage voluntarily, or through job loss, death, disability, or failure to maintain eligibility,

Benefit entitlement

rates of death, disability, sickness, accident, unemployment, medical treatment, and early, normal, and deferred retirement, election of options by members and policy owners, and

impact of benefit maxima,

Increment

rates of future new entrants,

Benefit continuance

death, disability recovery, marriage breakdown, remarriage, termination of economic dependency, and re-employment rates,

post-retirement pension adjustments, and

maintenance expense for a disabled person,

Claims development

reporting patterns,

settlement patterns,

reopened claims,

initial claims cost by type of benefit and age, and

cost-sharing arrangements (such as share of cost borne by members in the form of premiums or contributions, coinsurance, deductibles, annual and lifetime maxima, etc.),

Expense

expenses of marketing, administration, claim adjustment, and investment management,

Taxation

tax rates,

definition of tax base, and

limitations on the funding of registered pension plans,

Other

government benefit plan provisions and their integration with private sector plans, and

portion of claims costs paid under government programs.

1720 Selection of assumptions

.01 The assumptions that the actuary selects or for which the actuary takes responsibility, other than alternative assumptions selected for the purpose of sensitivity testing, should be appropriate in the aggregate. These assumptions should also be independently reasonable unless the selection of assumptions that are not independently reasonable can be justified.

.02 The actuary should select each needed assumption except for those, if any, which are prescribed, which are stipulated by law or which are stipulated by the terms of the engagement.

.03 If the actuary does not take responsibility for an assumption, then the actuary should so report. If the actuary considers it practical, useful and appropriate under the terms of the engagement to do so, the actuary should report the result of an alternative assumption. [Effective July 1, 2011]

.03.1 The actuary would select independently reasonable assumptions. The following are examples.

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, in accordance with subsection 1510, and

For a typical non-participating life insurance portfolio where experience is not passed on to policy owners, all assumptions would be established independently. However, for a typical participating life insurance portfolio where experience is passed on to policyholders through changes to the dividend scale, a reasonable representation of reality would be to assume that the current dividend scale and current experience persist into the future, as long as any implicit offsets in assumptions simplify the valuation and do not materially affect the amount of the valuation.

.03.2 The requirement for independently reasonable assumptions regarding contingent events would not require a test of reasonableness within an assumption. For example, a mortality assumption would need to be reasonable only as an independent assumption in total, even though there may be offsets between ages, sex and smoking status within the assumption.

.03.3 The reasonableness of an assumption does not depend on the manner in which an assumption is expressed as long as the assumption would be a reasonable representation of reality over the entire period to which the assumption applies. For example, a life insurance administrative expense assumption would not be reasonable if it were expressed entirely as a proportion of premium, even though it may represent the current reality but would not represent reality if all policies were to become paid up and administrative expenses were to continue to be incurred.

.03.4 A reasonable assumption would reflect current conditions as of the calculation date but would not necessarily have to reflect current conditions persisting into the future. For example, if current interest rates are extremely high or low in relation to past rates or future expectation, it would not be unreasonable to assume that interest rates change over time.

.03.5 The actuary's use of independently reasonable assumptions may result in the assumptions not being reasonable in the aggregate. For example,

> if all assumptions are independently reasonable but biased in the same direction, the combined effect of all assumptions may produce an excessive overall provision, or
>
> if all economic assumptions used in the valuation of a pension plan are independently reasonable but were developed based on different assumptions for price inflation, the assumptions may not be reasonable in the aggregate.

In such event, the requirement for assumptions to be appropriate in the aggregate would be more important than the requirement for independently reasonable assumptions. Certain assumptions may then be modified and may not be independently reasonable.

.03.6 If an assumption is prescribed, is stipulated by law or regulation 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. Subsections 1310 and 1320 provide additional guidance for these situations.

.04 If the use of assumptions that are not independently reasonable could be justified, inappropriateness in a particular assumption could be offset by the inappropriateness in another, for example if one is conservative and the other is not conservative, then they may be appropriate in the aggregate. For example, in a pension plan valuation, group annuity purchase costs may be calculated using mortality and interest rates that would be different from the rates used by an insurance company to price the annuity, but may still provide a reasonable cost for the annuity.

.04.1 There would be justification for not using independently reasonable assumptions when the assumption

is stipulated by law or regulation or is required by a court or by legal precedent, in which case the actuary would set assumptions as allowed by subsection 1310,

is in conflict with, or is impractical under, the terms of an appropriate engagement, in which case the actuary would set assumptions as allowed by subsection 1320,

is required in unusual or unforeseen situations, in which case the actuary would set assumptions as allowed by subsection 1330,

has no material impact on the results of the work, in which case the actuary would set assumptions as allowed by subsection 1340,

is an appropriate approximation, in which case the actuary would set assumptions as allowed by subsection 1510,

is a model assumption that reasonably represents reality, as described in subsection 1710, or

is consistent with accepted actuarial practice.

.04.2 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.

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

.06 If the stipulated assumption is appropriate but near the end of the accepted range, then it may be useful, if appropriate under the terms of the engagement, to report the result of an alternative assumption near the other end of the accepted range, especially in an external user report. The same is true for a stipulated assumption that, for example, the federal Income Tax Act continues as is when an amendment to it is virtually definitive.

.07 In assessing the utility of reporting the result of an alternative to an assumption for which the actuary does not take responsibility, the actuary would consider the dependence of external users on his or her work. For example,

> utility in actuarial evidence work would be assessed in the context of the adversarial system in tort litigation, which expects each side to develop its own case without help from the other side, or to identify and expose any flaws in the other side's case; therefore, it is consistent with that system for the actuary engaged by one side not to report the result of an alternative assumption if the lawyer for the other side is able to compel the actuary (or engage his or her own actuary) to calculate the result of a desired alternative, and

> if members of a pension plan receive a copy of the actuary's report that uses an assumption for which the actuary did not take responsibility, and if the members are identified as users in the report, the reporting of the results of using an alternative assumption may be useful to those members.

1730 Appropriate assumptions

.01 The appropriate model or data assumption for a matter should be the best estimate assumption of that matter, modified, if appropriate, to make provision for adverse deviations, and taking account of

> the circumstances of the case, past experience data, the relationship of past to expected future experience, anti-selection, the relationship among matters, and

> in the case of assumptions on economic matters for calculation of liabilities in a balance sheet, the assets which support those liabilities at the calculation date and the expected policy for asset-liability management after that date, except where the circumstances of the valuation require otherwise.

.02 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 July 1, 2011]

Acceptable range

.03 Variability in the circumstances of cases is significant and calls for a significant variation in assumptions among cases. Usually, therefore, the actuary who is familiar with the circumstances of a case makes the best selection of assumptions for that case. Two actuaries, each familiar with the circumstances of a case, may select different assumptions for that case. That is acceptable if the range of their selections is appropriately constrained by standards of practice.

.04 In other words, the crux of the matter is the selection of assumptions appropriate to a particular case from the relatively wide range of assumptions applicable to all cases. A relatively narrow range of assumptions among actuaries is secondary to the selection of appropriate assumptions.

.05 Sometimes, however, it is desirable that actuaries produce results within a relatively narrow range that the profession and the public perceive to be reasonable and consistent. It is then appropriate for the profession to supersede the actuary's selection by a prescription in the practice-specific standards that is within the range of assumptions otherwise considered acceptable.

Circumstances of the case

.06 An assumption about a matter would take account of the circumstances of the case if those circumstances affect that matter.

.07 The circumstances of the case affect experience on most matters other than economic matters.

Familiarity with the case

.08 In selecting assumptions, the actuary would have knowledge of the case. That may involve consultation with the persons responsible for the functions that affect experience.

.09 For example, if the calculation is to value the assets or liabilities of a benefits plan, then 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, then the actuary would consult the officers responsible for investments, underwriting, claims, marketing, product design, policy dividends, and policy servicing.

Past experience data

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

.11 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.

Usually, however, those criteria conflict with each other.

.12 Consider, for example, claims experience data of a property and casualty insurer. Homogeneous claims are those for similar policy benefits having similar

> emergence patterns (for example, property insurance claims tend to be reported more quickly than liability insurance claims),
>
> settlement patterns (for example, claims for glass damage tend to be settled more quickly than claims for bodily injury), and
>
> frequency/severity since high frequency/low severity claims tend to be more stable than low frequency/high severity claims.

.13 Combination of data, for example a combination of the insurer's personal lines and commercial lines claims, or a combination of the insurer's claims on primary and excess coverages, make the data less homogeneous. Greater homogeneity requires separation into more groupings, each with fewer data and hence less statistical credibility.

.14 To be statistically credible, the data may have to include data for the distant as well as the recent past. For example, as a result of periodic revisions to the insurer's policies, the available data may be for claims whose benefit dollar limits are lower than those limits for the claims being valued. Those data lack pertinence.

.15 Similarly, the insurer's experience data may be unreliable or not statistically credible and the only available data may be intercompany experience data, which may lack pertinence to the insurer.

.16 The actuary would be prudent in adjusting the available data to take account of the circumstances of the case. For example, without explicit justification, the actuary would not select a best estimate assumption that is more favourable than intercompany experience data in valuing an insurer's insurance contract liabilities.

Expected future experience vs. past experience

.17 To extrapolate pertinent past experience and its trend to the near future is often, but not necessarily, appropriate. 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. Moreover, any 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 insurer's case estimate practices may affect its claims development,
>
> an insurer'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

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

.19 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 expected 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. The first party may be an insurer's policy owner, a benefits plan's member, a borrower, a lender, or a shareholder.

.20 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,
>
> policy owner 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.

.21 A particular policy owner or plan member exercising a particular option may not be sure that the chosen option is the most advantageous. It is plausible, however, and experience has shown, that policy owners and plan members who can profit from doing so tend to exercise those options to the detriment of the insurer or plan. In the above example of a policy owner's right to renew term life insurance, the stipulated renewal premium on an unhealthy life insured may be less than the premium for a new policy whose purchase is subject to underwriting, in which case the policy owner will tend to exercise the renewal option. Alternatively, the policy owner may be able to purchase replacement insurance if the life insured is healthy for less than that renewal premium, and will tend to do that.

.22 Anti-selection also occurs when price does not take proper account of risk classification and the customer is free to buy or not, or to select among sellers. For example, the conversion at retirement of an employee's accumulated fund in a defined contribution pension plan tends to be more attractive to a female than a male if the conversion basis is the same for both. Similarly, automobile collision insurance tends to be more attractive to a young single male than to other members of the driving population if the premium is uniform.

.23 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 policy owner is small even when the aggregate potential detriment to an insurer 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 policy owner (who is also the life insured) in ill health may be unable to afford to continue an insurance policy with a low premium),
>
> the policy owner'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 policy owner, plan member, borrower, lender or shareholder.

Related assumptions

.24 Assumptions may be interrelated. For example,

interest rates and inflation rates may be related,

investment policy affects the risk related to interest rate swings, and

voluntary termination rates may affect death rates through anti-selection.

Supporting assets

.25 The investments that support the liabilities at the calculation date and the expected policy for asset-liability management after that date determine matters on which assumptions are needed. The following are examples.

If those investments include bonds rated A–, then an assumption of asset depreciation of those bonds is needed. That depreciation is usually expressed as a deduction from the assumed gross yield.

If the investment policy includes purchase or sale of such bonds with a particular remaining term, then an assumption of yield on those bonds with that term is needed.

.25.1 The circumstances of the valuation may require a discount rate not related to the assets at the calculation date and the policy for asset-liability management after that date. For example, pension solvency valuations may use external reference discount rates.

Indexing of benefits

.26 In most cases where benefits are indexed to inflation, use of an explicit gross rate of return and an explicit inflation rate would be appropriate for valuation of these benefits. In some cases, where the result of the valuation is only sensitive to the "net" or "real" rate of return, an explicit gross rate of return and an explicit inflation assumption would not be required for calculation purposes.

.27 The indexing may be partial; for example, benefits may be indexed to inflation, subject to a maximum increase of 3% during any year. In such cases, the separate assumptions of investment return rates and of inflation or wage rates are needed in a refined assumption, but a "net" or a modified "net" assumption may be a satisfactory approximation for calculation purposes. The approximation techniques for partial indexing in the calculation of transfer values from registered pension plans may be useful.

Assumptions other than model and data assumptions

.28 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.

.29 The actuary would also report an assumption of continuation of the status quo whose outlook is doubtful; for example, enactment of a change in tax rates whose proclamation is doubtful or likely to be deferred. It may be useful, if appropriate 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.

.30 An extreme assumption may be appropriate, but in that case the actuary would also report the result of the opposite extreme.

1740 Provision for adverse deviations

.01 In this subsection, "provision" means "provision for adverse deviations".

.02 A calculation should not include a provision if the related work requires an unbiased calculation.

.03 Otherwise, if a provision promotes expectations for financial security, then the calculation should include a provision that

strikes a balance among the conflicting interests of those affected by the calculation, and

takes account of the possibility to offset the effect of adverse deviations by means other than a provision.

.04 The amount of that provision should

take account of the effect of the uncertainty of the assumptions and data for the calculation on the financial security of those affected by the calculation,

not take account of the possibility of catastrophe or other major adverse deviation which is implausible in usual operations, except when the calculation specifically addresses that possibility,

in the case of a provision in respect of uncertainty of assumptions, result from selection of assumptions that are more conservative than best estimate assumptions, and

in the case of a plan or program where solvency is not required at all times, recognize the financial risks specific to that plan or program and the related objectives of the entity responsible for such a plan or program.

.05 The margin for adverse deviations in each assumption should reflect the uncertainty of that assumption and of any related data. [Effective July 1, 2011]

Unbiased calculations

.06 A provision is contrary to the purpose of the work if the work requires an unbiased calculation, as it does, for example, in splitting the value of a pension benefit fairly between two parties.

.07 The purpose of a provision is to promote financial security, but it does not follow that there should be a provision simply because financial security is thereby promoted. For example, inclusion of a provision for one party in a calculation designed to value a benefit fairly between two parties would promote the financial security of one party at the expense of the other party.

.08 An unbiased calculation may be described in a variety of ways, such as “neutral” or “even-handed”, or as using “best estimate assumptions” or “best estimates”.

Conflicting interests

.09 A provision in a calculation is a bias that may affect two conflicting interests in opposite ways. Hence there is a need to strike a balance.

.10 In some cases, the conflicting interests are those of separate users of the actuary's work. In other cases, the conflicting interests are internal to a single user of the actuary's work. For example,

provision in an insurer's scale of premium rates promotes financial security of its shareholders, but any provision makes the scale less competitive in the marketplace and so militates against another interest of those shareholders, and

provision in funding a pension plan lessens the likelihood that the contributor will be obliged later to increase contributions, but increases the likelihood of surplus emerging later in the plan that may be unavailable to the contributor.

Offsetting adverse deviations by other means

.11 There may be means other than a provision to offset the effect of adverse deviations. If they exist, those other means tend, themselves, to involve uncertainty but, to the extent that they are credible, the actuary would appropriately reduce the provision, thereby avoiding the distortion caused by the provision. Healthy skepticism is appropriate in assessing the credibility of such means.

.12 One example of other means is a retrospective rating, when a policy owner is paying a premium calculated from best estimate assumptions but with an undertaking to reimburse the insurer for adverse deviations in experience.

Uncertainty

.13 If assumptions could be made with complete confidence, if there were no statistical fluctuations, and if data had no defect, then there would be no need for a provision. But assumptions are virtually always uncertain. The exceptions, such as the assumption of the probability of getting a head when tossing a coin, are rarely encountered in practice. Some, especially those about events long after the calculation date, may be conjectural. Even when an assumption can be made with high confidence, the result may be subject to statistical fluctuation. For example, one may not get five heads when tossing a coin 10 times.

.14 Uncertainty in an assumption results from the risk of

misestimation of the best estimate assumption (sometimes referred to as "misestimation or deterioration of the mean") in the case of all assumptions, and

statistical fluctuation in the case of assumptions involving contingent events.

.15 The risk of defective data also creates uncertainty. Data, especially voluminous or complex data, are rarely without defect.

.16 That uncertainty of assumptions and data may militate against the financial security of those affected by the calculation. A provision reduces the potential adverse effect of that uncertainty.

Catastrophe or other major adverse deviation

.17 The provision would not exceed the amount needed fully to offset the effect of adverse deviations that are plausible in usual operations. The provision would offset only partially the effect of catastrophe or other major adverse deviations that are not plausible in usual operations.

.18 It is difficult to quantify the distinction between adverse deviations that are, and are not, plausible in usual operations. For each situation, the actuary would adopt a distinction that results in a provision that is not excessive. The intent of the provision is to enhance financial security, but provision for 100% security is excessive.

.19 The recommendation not to take account of the possibility of catastrophe or major adverse deviation does not apply to a calculation that specifically addresses that possibility; for example, calculation of the minimum capital that an insurer needs in order to have a satisfactory financial position, or a calculation with respect to stop-loss reinsurance, for which catastrophe is the event insured against.

Selection of conservative assumptions

.20 To make provision in respect of uncertainty of assumptions, the actuary would in some cases select assumptions that have a margin for adverse deviations applied to best estimate assumptions. Testing may be needed to assure that a contemplated assumption achieves the desired calculated amount compared to the calculated amount using the corresponding best estimate assumption.

.21 Examples of the use of assumptions that make provision in respect of the uncertainty of the assumptions are

a best estimate assumption combined with a margin for adverse deviations, and

scenario testing of a range of assumptions and selection of a scenario (or a point between two scenarios) that produces a result that is toward the conservative end of the range of possible results.

.22 One actuarial cost method may be more conservative than another. For example, other things being the same and until a certain maturity point is reached, the entry age normal actuarial cost method, when applied to a group, usually results in higher contributions to a pension plan than the unit credit actuarial cost method. If the unit credit method is the appropriate method, then it would not be appropriate to make provision for adverse deviations by using the entry age normal method and best estimate assumptions. The reason is that there is no assurance that the amount of such a provision is appropriate. The better practice is to make the provision through selection of conservative assumptions.

Adjustments to policy dividends, premium rates, contributions, and benefits

.23 Those adjustments can offset the effect of adverse deviations.

.24 The insurer promises to declare policy dividends in accordance with experience, but does not promise a specified amount of policy dividends. An insurer's participating insurance contract liabilities include the present value of expected future policy dividends. If the insurer experiences adverse deviations and reduces policy dividends as a result, then the amount included in insurance contract liabilities corresponding to the reduction in policy dividends becomes available for other promised benefits and therefore is not needed in the provision. If the amount included for policy dividends is large, and if the insurer's management of its policy dividend practices is responsive to change in conditions, then a minimal or, in the extreme case, zero provision for adverse deviations is appropriate.

.25 Similarly, in the event of adverse deviations, contributions may be adjusted, decreases in benefits or even winding-up of the plan may be possible, and the plan may have surplus that can substitute for contributions.

.26 Those adjustments are rarely fully credible. For example, an insurer's legal right to adjust policy dividends may be constrained by inertia or marketplace forces; a participating employer who can afford to pay higher contributions today may be unable to do so later; substitution of surplus for contributions may be restricted, and assessment of insurer's or participating employer's ability to make the adjustment may be difficult or impractical.

Provision of zero

.27 A provision of zero is appropriate

for work that requires an unbiased calculation, in which case, the provision of zero is always appropriate, and

where the actuary considers a provision but concludes that a provision does not promote expectations for financial security or that there are other means that reduce or eliminate the need for the provision.

Examples

.28 Two important examples of provision for adverse deviations are in the valuation of

the insurance contract liabilities of an insurer for its financial statements if they are prepared in accordance with generally accepted accounting principles, and

the liabilities of a benefits plan if the actuary is giving advice on its funding and if the applicable law or terms of the engagement require a provision for adverse deviations.

.29 In valuing those liabilities, the actuary would strike a balance between security of benefits promised to policy owners or plan members and equity among conflicting interests.

Security of benefits promised

.30 A provision in reported liabilities reduces the likelihood that the amount thereof will later prove to be inadequate. As well, if those reported liabilities (including the provision) are funded (i.e., fully supported by investments) and the provision accelerates funding, then the provision promotes security of those benefits.

.31 On the other hand, if those liabilities are unfunded, then the provision has no explicit effect on the security of those benefits, (unless some action that improves benefit security occurs or is taken) since the actual ultimate value of the benefits has not changed and neither has the likelihood of them being paid.

.31.1 A plan or a program where solvency is not required at all times could include plans such as a pension plan, a post-retirement benefit plan or a public personal injury compensation plan. Depending on the purpose of the valuation for such a plan, a provision for adverse deviations may be included. For example, when funding a pension plan, a provision for adverse deviations would be introduced if required by law or by the terms of the engagement.

Generations of policy owners, shareholders or plan members

.32 The amount of a provision increases the liabilities of an insurer or a benefits plan, and decreases its equity or surplus, or increases its unfunded liabilities, by the same amount. If the later experience is according to the best estimate assumptions, then the provision will revert to equity or surplus and be available to finance policy dividends or benefit increases or contribution decreases. That is an inequitable result if one generation of policy owners, shareholders or plan members bears the cost of making the provision, but a later generation makes a windfall from its reversion to equity or surplus. In striking a balance, the actuary may have to give financial security greater importance than equity unless the terms of the engagement suggest otherwise.

.33 In the case of policy owners, the provision and its later reversion may affect policy dividends on participating policies and premiums and benefits on adjustable non-participating policies. It is appropriate for the insurer to manage its policy dividends and adjustments so that an unneeded provision reverts to the policy owners who made it.

.34 In the case of shareholders of a client or employer, a provision and its later reversion could transfer share value from the current to a future group of shareholders.

.35 In the case of benefits plan members, the provision and its later reversion may affect benefits or the members' share of contributions. In those cases, it may be difficult to strike a balance between financial security and the various generations of plan members. The importance of inter-generational interests varies, however, among plans. It tends, for example, to be a more important consideration in

- contributory plans when the members pay a percentage share of the contributions, and
- multi-employer plans with negotiated contributions.

Policy owners versus shareholders, and plan members versus the participating employer

.36 A provision tends to favour policy owners and benefits plan members at the expense of the participating employer and the insurer's shareholders. A participating employer, by establishing a benefits plan, and an insurer, by selling policies, create reasonable expectations among benefits plan members and policy owners for payment of the promised benefits. The actuary would therefore strike a balance that promotes security of promised benefits but that is not excessive. An excessive provision would militate against the willingness of participating employers to improve plan benefits and the ability of insurers to raise needed capital.

Reporting the provision

.37 The actuary would usually make the calculation including the provision. It is not necessary to report the amount of the provision itself, and in some situations, may be misleading to do so without also reporting a discussion of the related uncertainty and risk. The actuary would calculate the amount of the provision as the difference between the results of two calculations; namely, a calculation including the provision, and one not including the provision. That is practical only when the actuary selects the best estimate assumptions explicitly.

.38 Reporting the amount of the provision would be accompanied by a discussion of the related uncertainty and risk.

Assumptions: margin for adverse deviations

.39 The standards in this subsection apply to the selection of a margin for adverse deviations in an assumption if the actuary uses that margin in order to make provision for adverse deviations. The standards do not apply when the margin in an assumption makes provision for another purpose, such as to make future benefit improvements.

.40 A margin for adverse deviations may be expressed as one of

the difference between the assumption used for the valuation and the best estimate assumption. (For example, if the actuary expects the interest rate to be 10% and assumes 8%, then the margin for adverse deviations is 2%. The provision for adverse deviations is the dollar amount of increase that results from a margin for adverse deviations. For example, if that 2% margin for adverse deviations in the interest rate assumption increases liabilities from $100 million to $120 million, then the provision for adverse deviations is $20 million.)

a multiplier to the liabilities without provision for adverse deviations. (For example, if the actuary sets claim liabilities equal to 1.1 x expected claim liabilities, then the margin for adverse deviations factor is 10% and the provision for adverse deviation is 0.1 x expected claim liabilities.)

an addition to the liabilities without provision for adverse deviations, calculated through scenario testing.

.41 Actual future experience will be equal to the combined effect of

expected experience (i.e., in accordance with the best estimate assumption), and

deviation, favourable or adverse, from expected experience.

.42 Deviation of actual from expected experience may result from one or more of

error of estimation, which may be favourable or adverse. (Except in the simplest cases, it is not possible to determine expected experience with complete confidence. Past experience data may be insufficient or unreliable. Future conditions may differ from the conditions that generated the past experience.)

deterioration or improvement of the expected experience as a result of influences which the actuary does not anticipate,

statistical fluctuation, which also may be favourable or adverse.

.43 A larger margin for adverse deviations (compared to the best estimate assumption) is appropriate if

the actuary has less confidence in the best estimate assumption,

an approximation with less precision is being used,

the event assumed is farther in the future,

the potential consequence of the event assumed is more severe, or

the occurrence of the event assumed is more subject to statistical fluctuation.

.44 A smaller margin for adverse deviations is appropriate if the opposites are true.

.45 In principle, it is better to reflect an assumption's uncertainty by a margin for adverse deviations in the assumption itself rather than by adjustment to another assumption. For example, except in case of approximation, it is not accepted actuarial practice to make provision for adverse deviations in claim liabilities by assuming that the investment return rate is zero; i.e., by valuing the liabilities on an undiscounted basis.

.46 Selection of a relatively large margin for adverse deviations for the assumption whose uncertainty most affects the calculation and a zero margin for the others may be an appropriate approximation.

.47 The choice of the sign (+ or –) of the margin for adverse deviations (i.e., whether the assumption for the valuation is larger or smaller than the best estimate assumption) is sometimes complex, and testing may be necessary to ensure that the margin affects the calculation in the desired direction; i.e., to ensure that the margin is not a margin for favourable deviations. For example,

> in the valuation of an insurer's insurance contract liabilities, the margin for the withdrawal rate assumption may be positive at some policy durations and negative at other policy durations, and

> in the valuation of the liabilities of a pension plan, a positive margin for the early retirement rate assumption usually, but not always, increases the liabilities, so testing is needed to determine the sign of the margin.

.48 A margin with the seemingly wrong sign in one assumption is, however, appropriate if it ensures consistency with a related assumption having a greater effect on the calculation. For example, in the valuation of liabilities, the margin in the interest rate assumption is usually negative and the margin in the inflation rate assumption is usually positive. If, however, the actuary assumes that the inflation rate is the nominal interest rate minus the real interest rate, then both margins would have the same sign to ensure consistency; i.e., negative if investment income has the greater effect, positive if expenses or inflation-indexing of benefits has the greater effect.

1750 Comparison of current and prior assumptions

.01 Unless the actuary reports the inconsistency, the assumptions for a calculation for a periodic report should in the aggregate be consistent with those of the prior calculation. [Effective December 1, 2002]

.02 The definition of consistency for the purpose of this recommendation varies among practice areas. 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. For example, if the investment return rate assumption is 6.5% at the current calculation date and was 7% at the prior calculation date, then the actuary would report the change even if the outlook had changed downward by 0.5% between the two dates.

.03 For valuation of an insurer's insurance contract liabilities for its 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 in the case of a best estimate assumption,

each reflect the risks at their respective calculation dates in the case of a margin for adverse deviations, and

are located at the same point within the range of accepted actuarial practice.

.04 The assumptions at a calculation date are in the aggregate consistent with the corresponding assumptions at the prior calculation date if

each assumption is so consistent, or

there are inconsistencies among the assumptions but the result of the calculation is the same as if each assumption were so consistent.

.05 If the assumptions are in the aggregate not so consistent, then 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.

1800 Reporting

1810 Standard reporting language

.01 The actuary's external user report should incorporate any standard reporting language applicable to the work. [Effective December 1, 2002]

.02 The practice-specific standards for work describe any applicable standard reporting language.

.03 The purpose of standard reporting language is to simplify the actuary's communication with users by creating a clear, easy to recognize, distinction between the usual situation and the unusual (sometimes problem) situation. The standard reporting language, while abbreviated, acquires precision by the convention that the situation is usual if there is no reservation. Any reservation is disclosed in a special paragraph and described either there or by reference. Standard reporting language is thus similar to the auditor's standard report on financial statements.

.04 The standard reporting language 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.

.05 Here is the skeletal structure of standard reporting language.

Addressee, which usually identifies the client or employer.

Scope paragraph, which describes the work and its purpose and says that the work was done in accordance with accepted actuarial practice in Canada in a usual situation, or that it was done in accordance with accepted actuarial practice in Canada "except as described in the following paragraph" in an unusual situation.

Reservations paragraph (omitted in the usual situation), which either compares the particular (unusual) situation to the usual situation or refers to that comparison elsewhere.

Opinion paragraph, which reports the actuary's opinion, without reservation in a usual situation and with reference to the reservations paragraph in an unusual situation. The opinion paragraph either reports the result of the work, which is practical only if the result is short, or references its location.

Identification of the actuary.

Report date.

1820 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 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,

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 methods and assumptions 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 methods and assumptions 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 January 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.

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

.04 Subsequently, the actuary should withdraw or amend the report if information comes to hand after the report date that invalidates the report.

.05 A duty of confidentiality in an appropriate engagement supersedes any of the foregoing portions of this recommendation with which it conflicts, but does not supersede an actuary's obligations to the Canadian Institute of Actuaries, pursuant to the bylaws or the Rules of Professional Conduct. [Effective December 1, 2002]

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 of a case 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, then 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 required by law, then 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, then a simple statement to that effect is a powerful statement, and reassuring even to a user with a limited understanding of what accepted actuarial practice is. If the work is not in accordance with accepted actuarial practice, then 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.

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

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

> "accepted actuarial practice 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 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

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

.19 If, as is common, accepted actuarial practice for an aspect of the work encompasses a range, then 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

.20 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

.21 Repealed

.21.1 Where an assumption or method is mandated by law or specified by the terms of the actuary's engagement, a statement to that effect constitutes an appropriate rationale for that assumption or method.

.21.2 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

.22 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

.23 A report with reservation may be undesirable but is unavoidable in the following examples.

The actuary was obliged to use the work of another person and has doubts about the appropriateness of so doing.

The actuary was obliged to use insufficient or unreliable 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. Rule 5 (Conflict of Interest) permits the actuary who has a conflict of interest to perform professional services if stated conditions are met. In reporting with respect to such a case, it is good practice to note the conflict and confirm that the conditions are met. If, as a result of an apparent but not actual conflict, a user might doubt the actuary's objectivity, then it is useful to report why the conflict is not real. There is no conflict of interest, however, merely because a user and the actuary's client or employer have conflicting interests.

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

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

.26 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 actuary takes responsibility for all of the work, and

if a periodic report, then 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

.26.1 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.

.26.2 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.

.26.3 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

.27 In giving an opinion, the actuary would begin with "In my opinion..." which is a signal that the actuary is giving a formal, professional opinion on a matter within the domain of actuarial practice. The actuary would add appropriate qualification when giving an opinion on a matter outside that domain but on which he or she is able to comment. For example,

"The valuation of Mrs. Smith's life interest in Mr. Smith's estate, and the residual value, both depend on the future value of the residential property which makes up the bulk of that estate. An assumption about future real estate values for any given property is outside the domain of actuarial practice but, in my opinion, it is reasonable to assume that property values will generally continue to increase over time at the same rate as inflation."

.28 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 accordance with accepted actuarial practice and report that the assumption or method was specified by the terms of the engagement, as applicable.

Identification

.29 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. To add additional identification, such as

the actuary’s relationship with the client or employer (e.g., “Vice-President and Actuary” or “Consulting Actuary”), or

the actuary’s other professional qualification (e.g., “Fellow of the Casualty Actuarial Society”)

may be appropriate but may create confusion about the actuary’s qualification to sign the report and about the standards governing the work, and may diminish the standing of the Canadian Institute of Actuaries.

Report date

.30 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.

.31 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.

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

.32.1 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

.33 After the report date, the actuary has no obligation to seek additional information which, 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 which 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.

.34 That additional information consists 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 were a subsequent event, and if it would have to be taken into account in the data, methods, or assumptions for the work, then 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 which would lead the actuary to select different assumptions at the next calculation date for a periodic report.

.35 If the actuary determines that the event 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, then 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, then 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.

.36 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,

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.

1830 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 December 1, 2002]

.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.

1840 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.