



## ***Exposure Draft***

# **Exposure Draft for Revised Standards of Practice – Part 4000 Practice-Specific Standards for Actuarial Evidence and Relevant Paragraphs of Part 1000 General Standards**

**Actuarial Standards Board**

**September 2012**

Document 212071

*Ce document est disponible en français*  
© 2012 Canadian Institute of Actuaries

## Memorandum

**To:** All Fellows, Affiliates, Associates and Correspondents of the Canadian Institute of Actuaries and Other Interested Parties

**From:** A. David Pelletier, Chair  
Actuarial Standards Board  
Nancy Yake, Chair  
Designated Group

**Date:** September 4, 2012

**Subject:** **Exposure Draft for Revised Standards of Practice – Part 4000 Practice-Specific Standards for Actuarial Evidence and Relevant Paragraphs of Part 1000 General Standards**

**Comment Deadline:** **November 30, 2012**

---

### INTRODUCTION

The attached exposure draft was approved by the Actuarial Standards Board (ASB) on August 30, 2012. This exposure draft includes two documents, a revised Part 4000 (Practice-Specific Standards for Actuarial Evidence) and a few related proposed changes to Part 1000 (General Standards). Since the revised part 4000 is substantially a re-write of the current standards of practice, we have not included a red-lined version showing the changes.

A [notice of intent](#) on this matter was published on May 11, 2011, with a comment period ending on July 15, 2011.

All actuaries, regardless of their primary area of practice, should consider the potential relevance of these proposed standards, with respect to any of their work that relates to a dispute resolution proceeding.

### BACKGROUND

As was stated in the notice of intent, the Practice-Specific Standards of Practice for Actuarial Evidence (the AE Standards) were most recently rewritten in January 2004, as part of the CIA's initiative to adopt consolidated Standards of Practice. No significant changes have been made to the AE Standards since that time (except that a revised section 4300 regarding the capitalized value of pension plan benefits for marriage breakdown was adopted with effect from January 1, 2012).

In view of the increasing judicial and legislative attention paid to the role of the expert in the courtroom and the evolving practices related to actuarial evidence work, the ASB believes that it would be in the public interest and the interest of the profession to revise the AE Standards (part 4000, excluding section 4300) and relevant sections of the General Standards (part 1000).

## **ISSUES, PROPOSED CHANGES AND DESIRED OUTCOMES**

The proposed revision of the AE Standards and relevant sections of the General Standards is intended to accomplish the following:

- Update the Standards of Practice to reflect evolving practices and new developments within the profession and within the legal system in Canada, relevant to actuarial evidence work;
- Clarify the wording to improve the understanding of the Standards of Practice; and
- Improve the appropriateness of the Standards of Practice for the broader scope of actuarial evidence work.

The notice of intent stated: “At this point, there is no intention to significantly expand the AE Standards or to significantly narrow the range of practice.” The input received in response to the notice of intent generally supported this perspective. The proposed changes to the current standards, as shown in the exposure draft, include some revisions to wording, some clarification and additional guidance regarding the applicability to the broader scope of actuarial evidence work, and some re-organization of part 4000. Generally, the exposure draft follows the direction indicated in the notice of intent. However, there has been considerable revision of many of the proposed details in reaction to the comments received on the notice of intent. These comments are summarized below, together with the responses of the Designated Group (DG).

The ASB and DG are of the view that the attached exposure draft has benefited significantly from the comments received, and are grateful for the time and effort that commenters took to communicate their views.

An important issue addressed by the DG and ASB was whether to include specific guidance in certain areas in the Standards or in other guidance material such as an educational note. In the course of its work, the DG identified a number of areas where it was considered preferable to provide guidance initially by means other than directly in the Standards.

## **COMMENTS RECEIVED**

A total of nine submissions on the notice of intent were received from a variety of stakeholders. In particular, five of these submissions were made by individual CIA members, three were made by external organizations related to the legal system in Canada, and one was made by the CIA’s Committee on Actuarial Evidence. The DG carefully considered all comments received.

A summary of the major comments received from the CIA membership and other interested parties, and the DG’s response to those comments, is shown below. In addition to these comments, there were suggestions for a number of other minor changes and edits to the current part 4000, and many of these were reflected.

### **1. General**

#### *Comment*

In general, there was support for the objectives and a number of the features proposed in the notice of intent. Nevertheless, some of the issues raised in the notice of intent prompted a wide range of comments.

### *DG Response*

The DG appreciated the quality and range of comments received, and found much of the input useful in its deliberations. This constructive feedback resulted in the revision of a number of aspects of the proposed standards, as reflected in the exposure draft.

### *Comment*

It was suggested that the focus, structure and approach of the Standard of Practice for Expert Testimony by Actuaries in the U.S. (ASOP 17) is preferable to the current part 4000 in our Standards of Practice, and should be used as a model for the revisions to part 4000. ASOP 17 addresses the actions of the actuary when acting in an expert capacity (regardless of the practice area), does not cover any subject-matter specifics, is more comprehensive than part 4000, and includes some useful definitions.

### *DG Response*

The DG agrees that parts of ASOP 17 provide useful input into the revision of part 4000, and has incorporated some of the ASOP 17 wording in the exposure draft. For example, parts of paragraphs 4210.08 and 4240.05 and the descriptions of “an expert”, “an expert opinion”, and “testimony” included in the exposure draft have been developed based on material from ASOP 17. A complete restructuring of part 4000 is not practical, however, since part 4000 should be consistent with the style and format of the other parts of the Canadian Standards of Practice and reflect professional practices and the legal environment in Canada.

### *Comment*

The AE Standards should not be revised to narrow the range of practice because the scope and nature of the assignment varies significantly between engagements.

### *DG Response*

The DG appreciates that the scope of AE projects is wide and that circumstances do vary considerably from case to case, and has prepared the exposure draft taking these factors into account. As shown in the exposure draft, it is proposed that a number of sections be added to the AE Standards, but these additional sections focus on clarifying the scope of AE work, providing guidance on what factors should be considered by the actuary, and expanding the disclosure requirements.

## **2. Scope**

### *Comment*

A clear definition of the scope of actuarial evidence work is critical, and should perhaps be added to subsection 1110 of the General Standards. Such definition should include work where there is litigation or a similar adversarial position, regardless of the practice area involved. An actuary who provides an independent expert opinion in situations involving two or more parties with diverse interests is not necessarily doing actuarial evidence work. The situation must be adversarial before it is actuarial evidence work.

### *DG Response*

The DG agrees that an appropriate definition of actuarial evidence work is important, and has added a definition as paragraph 1110.03.1 to the General Standards. The DG also agrees that a situation involving two or more parties with diverse interests should not be included in the scope of actuarial evidence work, unless such situation is part of a dispute resolution proceeding.

Hence, the new definition that has been added to the exposure draft as paragraph 1110.03.1 includes a provision that actuarial evidence work must relate to a dispute resolution proceeding. The definition also includes a specific reference to other practice areas, such as insurance and pensions.

*Comment*

Two of the examples provided in the notice of intent (i.e., the valuation of a contingent interest in an estate for estate settlement purposes, and the valuation of an interest in a life insurance policy for transfer of ownership or charitable donation purposes) should not be included under the scope of actuarial evidence work. Possibly, guidance is needed with respect to this type of work, but such guidance should not be included in the AE Standards.

Further, there is a range of activities where the actuary may be acting as an advocate or providing information, and often such work should not be considered to be actuarial evidence work. Examples of what is and is not actuarial evidence work would be useful. Where the actuary is providing only fact evidence, and not an independent expert opinion, such work should be excluded from the scope of actuarial evidence work.

*DG Response*

The proposed scope of actuarial evidence work has been revised somewhat from the draft wording included in the notice of intent, and is described in some detail in section 4100 of the exposure draft. The examples noted above (i.e., the contingent interest in an estate and the valuation of an interest in a life insurance policy) do not meet the proposed definition of actuarial evidence work and hence have been deleted from the proposed scope of actuarial evidence work. Nevertheless, the ASB believes that it may be useful to have some guidance (outside of the standards) to assist actuaries who are providing values for items such as a contingent interest in an estate or an insurance policy, and has referred this issue to the Practice Council of the CIA.

To help clarify the scope of actuarial evidence work, section 4100 of the exposure draft includes a number of examples of what is, and is not, actuarial evidence work. Wording has been included to describe the situation where the actuary is providing only fact evidence, and not an expert opinion. Such work providing only fact evidence is specifically excluded from the scope of part 4000. In addition, section 4100 recognizes that the actuary may be providing litigation advice, other than an expert opinion, and notes that such litigation advice is not included in the scope of actuarial evidence work. If the actuary is uncertain as to whether the work falls within the scope of the AE Standards, the actuary should consult with the chair or vice-chair of the CIA Committee on Actuarial Evidence (paragraph 4100.10 of the exposure draft).

*Comment*

The reference to professional negligence in the Scope section of the notice of intent is not clear. When an actuary is providing evidence in a case related to professional negligence, it should be clear what qualifications are needed by the actuary.

*DG Response*

The exposure draft expands on the reference to professional negligence. It also distinguishes between the actuary who is providing only fact evidence in a professional negligence case, and the actuary who is providing an expert opinion (see paragraphs 4100.05 and 4100.07 of the exposure draft). The AE Standards apply only to the situation where the actuary is providing an expert opinion.

*Comment*

The examples of actuarial evidence work should include a specific reference to the “determination of criminal rates of interest” to highlight the importance of this role for the actuary, and a specific reference to wrongful dismissal disputes.

*DG Response*

The first and fifth examples in paragraph 4100.05 of the exposure draft include specific references to wrongful dismissal disputes and the determination of criminal interest rates. The DG believes that these references are sufficient.

**3. General Considerations**

*Comment*

One comment noted that it should be acceptable for the actuary to act as an advocate in some cases. Another comment noted that the actuary is almost always an advocate for one side, given that the actuary has likely been pre-screened to ensure that his or her testimony will support that party’s view. The submissions from two of the external organizations noted that an expert witness must be independent and not an advocate for one party to the dispute.

*DG Response*

The exposure draft recognizes that under the terms of an appropriate engagement the actuary may be providing litigation advice and acting as an advocate, but not providing an expert opinion. Such work would not be covered by the AE Standards. Nevertheless, if the actuary is engaged to provide an opinion as an expert, then he or she must not be acting as an advocate when preparing that opinion or providing related testimony.

This requirement for an expert opinion to be independent and objective is consistent with the rules for civil procedure and the rules of court in Canada. Such rules require that an expert witness must indeed be independent and not be acting as an advocate for one party to the dispute when preparing his or her expert opinion. For example, the Ontario Rules of Civil Procedure were amended, effective January 1, 2010, to require that the expert’s duty to the court overrides any obligation to the person who retained the expert. If it appears that the actuary is not providing an independent opinion and is acting as an advocate when preparing that opinion, then the actuary’s evidence might be disregarded by the court or other dispute resolution proceeding.

*Comment*

Conflict with the law is a complex issue. There may be different interpretations of the law, and such interpretations can evolve and be challenged. The AE Standards should recognize that the actuary may be working in such circumstances.

*DG Response*

The exposure draft specifically notes in paragraph 4210.08 that an engagement may be appropriate if it requires that the actuary assist with the challenge of an interpretation of the law.

*Comment*

It was suggested that the wording in paragraph 3 of section 1.2 from ASOP 17 presents a better perspective on the actuary’s work in unusual or unforeseen situations than that currently included in paragraph 1330.02 of our General Standards.

### *DG Response*

Paragraph 1330.02 is applicable to all practice areas. If the wording of this paragraph is to change, as suggested, there would be an effect on all practice areas. The DG has concluded that such changes to paragraph 1330.02 are beyond the scope of this project. Nevertheless, the DG did add wording in paragraph 4210.08 of the exposure draft to address one of the issues covered in ASOP 17 (paragraph 3 of section 1.2).

### *Comment*

The AE Standards should not include any guidance with respect to the terms of an appropriate engagement. Such guidance should be included in an educational note.

### *DG Response*

Determining whether an engagement is appropriate is an important issue, and some guidance should be provided in the AE Standards. Although the exposure draft does address certain issues related to the appropriateness of an engagement, the DG believes that an educational note expanding on the AE Standards to provide additional detail and examples would be useful.

## **4. Assumptions and Methods**

### *Comment*

The AE Standards should not prescribe specific assumptions for a number of reasons, including:

- The wide range of potential assignments would result in a wide range of appropriate assumptions;
- It is often useful or required to consider a number of alternate assumptions for the calculations; and
- Assumptions are mandated by law or court practices in some cases.

### *DG Response*

The exposure draft does not include any new prescribed assumptions. As this revision of the AE Standards specifically excludes section 4300 of the current Standards, Capitalized Value of Pension Benefits on Marriage Breakdown, the prescription of assumptions in that section has not changed.

### *Comment*

Any new guidance with respect to the interpretation of subsection 1720 of the General Standards (with respect to conflicts between assumptions mandated by law, independently reasonable assumptions, assumptions appropriate in the aggregate, and the actuary's best estimate assumptions) should not prescribe any methods or assumptions, because there are often a number of reasonable approaches. Nevertheless, appropriate disclosure is important.

### *DG Response*

The DG understands that the issues related to the interpretation and application of subsection 1720 are complex and do vary significantly by jurisdiction, and that the CIA Committee on Actuarial Evidence is working on an educational note with respect to these issues. Hence, the exposure draft references the general application of subsection 1720 for actuarial evidence work, but does not include any detail, and requires certain disclosures. Once the educational note is published, it might be appropriate to consider moving some of that guidance into the Standards at a future date.

*Comment*

The term “prescribed” is defined in subsection 1110 to mean prescribed by the Standards. If the term “prescribed” is also to be used in the context of required by law, then some clarification should be added. Alternatively, another expression, such as “mandated by law”, should be used.

*DG Response*

To add clarity to the Standards, the exposure draft uses the term “prescribed” only to refer to situations where something is prescribed by the Standards. Where an assumption or method is required by law, the term “mandated” is used in the exposure draft.

*Comment*

The explanation of the actuarial present value method should not be included in the AE Standards, and instead should be included in the General Standards or an educational note.

*DG Response*

As there is currently a definition of “actuarial present value method” in paragraph 1110.04 of the General Standards, much of the definition of this term currently included in part 4000 has been deleted. Certain guidance which is most relevant for the AE Standards has been retained in the exposure draft.

*Comment*

Parts of the current AE Standards regarding assumptions and methods should be retained, including the guidance that assumptions should be best estimate without bias (where possible), and that assumptions selected by the client should be plausible.

*DG Response*

Although the exposure draft includes a reorganizing and rewording of some of the guidance regarding assumptions, the reference to best estimate assumptions has been retained and additional examples of where margins may be appropriate have been added. The requirement for assumptions stipulated by the terms of the engagement to be plausible has also been retained.

**5. Testimony**

*Comment*

The submission from one of the external organizations supported the addition of a definition of testimony. The submissions from two of the external organizations noted that all evidence provided by an independent expert, and not just the testimony, should be fair and balanced, and hence the section in the AE Standards on testimony should be expanded to cover all evidence.

Another comment suggested that most of the actuary’s evidence is included in written reports, very few of which lead to oral testimony. As a result, the AE Standards should focus on the written report, and oral testimony should be addressed separately.

*DG Response*

The section in the current AE Standards regarding testimony has been split into a part which addresses issues relevant for all actuarial evidence work, and a part which addresses issues relevant to testimony only. Further, the exposure draft includes a definition of testimony.

## **6. Court Practices**

### *Comment*

One comment noted that the standards should not be revised to include a definition of court practices, as such definition would vary by jurisdiction. The submission from one of the external organizations advised that it was important to define court practices, but that the definition should be sufficiently broad to cover the wide variety of possible settings and proceedings.

### *DG Response*

Subsection 4210 of the exposure draft requires that the actuary take into account the rules of civil procedure and the rules of the court in the relevant jurisdiction, as well as other rules that might be applicable to the dispute resolution proceeding. A general description of court practices is also included. The DG believes that the proposed wording sufficiently recognizes the potential differences by jurisdiction, as well as the variety of settings and proceedings.

## **7. Reporting**

### *Comment*

Two subsections in the current AE Standards that address disclosure issues (i.e., 4160 and 4250) should be merged.

### *DG Response*

The DG agrees that all disclosure issues should be addressed in one section. The exposure draft reflects this consolidation.

### *Comment*

The list of required disclosure items should be expanded to include conflict of interest issues.

### *DG Response*

The list of required disclosure items for an external user report has been expanded to include a reference to circumstances, if any, where the independence of the actuary's expert opinion may reasonably be questioned, as well as a number of other items.

### *Comment*

The disclosure approach described in paragraph 4220.03 of the current AE Standards, where there is a base model and adjustments to that base model, should not be viewed as the preferred approach. An approach where multiple scenarios are presented should be viewed as equally valid.

### *DG Response*

Paragraph 4430.03 of the exposure draft addresses the circumstance of multiple scenarios, and does not refer to a base model and adjustments to that base model.

## **8. Other**

### *Comment*

The term "reversion" in paragraph 4120.04 of the current AE Standards should be clarified or removed.

### *DG Response*

As the DG concluded that work related to the settlement of estates is not actuarial evidence work, all references to such work have been deleted from part 4000.

### *Comment*

The only comment received with respect to the material in section 4400 of the current standards (Computation of Criminal Rate of Interest) was that it should be moved to an educational note.

### *DG Response*

While the DG agrees that the level of detail provided in the current section 4400 is often more appropriately included in an educational note instead of a standard, the guidance has been retained in the AE Standards. The determination of whether an interest rate is a “criminal rate” is a role reserved for the actuary in legislation. Hence, in view of this reserved role, the DG believes that detailed standards are appropriate. No other changes were suggested to the Criminal Rate of Interest Standards. Hence, the DG did not undertake a comprehensive review of this section, and introduced only minor revisions to the wording to improve consistency with other sections of the AE Standards.

## **PROPOSED TIMELINE AND EARLY IMPLEMENTATION**

It is the responsibility of the ASB to make final decisions regarding the revised Standards of Practice. The ASB hopes to adopt the final standards in 2013, with a proposed effective date of December 31, 2013.

It is expected that early implementation will be encouraged.

## **ISSUES AND FEEDBACK**

Comments on this exposure draft are invited **by November 30, 2012**. Please send your comments, preferably in an electronic format, to Nancy Yake at [nancy.yake@sympatico.ca](mailto:nancy.yake@sympatico.ca), with a copy to Chris Fievoli at [chris.fievoli@actuaries.ca](mailto:chris.fievoli@actuaries.ca).

There will be an opportunity for members to provide comments on this exposure draft at the Actuarial Evidence Seminar sponsored by the CIA, to be held on September 14–15, 2012. No specific forums for submitting comments are planned at this time regarding this exposure draft other than the receipt of written comments at the above addresses and the receipt of comments at the Actuarial Evidence Seminar.

Feedback is invited particularly on the following issues:

1. If assumptions are stipulated by the terms of the engagement, is it sufficient for such assumptions to be plausible? Or should they also be reasonable, or meet some other requirement?
2. Do you anticipate any difficulties in complying with the proposed standards? For this purpose the need for additional work—for example, for complying with the more detailed disclosure requirements—is not considered a difficulty.
3. Do you agree that the proposed standards are unambiguous and reasonably reflect current best practice?

Due process has been followed in the preparation of this exposure draft.

The Designated Group that is responsible for the development of the AE Standards is chaired by Nancy Yake, and includes the following members: Brian FitzGerald, Normand Gendron, Jay Jeffery, Ian Karp, John Tarrel, and David Wolgelerenter.

ADP, NY

## 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 independent expert opinion with respect to any area of actuarial practice in the context of an actual or anticipated dispute resolution proceeding. 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*]

## 1120 INTERPRETATION

- .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 in roman text 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 roman text, often in the expression, “The actuary would...”, and is less forceful than the mandative “should”.

**1440 GENERAL KNOWLEDGE**

- .01 *The actuary should have adequate knowledge of the conditions in the practice area in which he or she is working.* ~~[Effective December 1, 2002]~~
- .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 Month XX, 20XX]
- .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**

- .03 *The actuary should have adequate knowledge of the circumstances of the case on which he or she is working.* [Effective December 1, 2002]
- .04 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.
- .05 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.
- .06 The relevant knowledge for calculation with respect to an individual is the demographics of the individual and the context of the calculation.
- .07 Additional conservatism in making a calculation is not a substitute for knowledge of the circumstances of the case.

**4000—ACTUARIAL EVIDENCE**

## TABLE OF CONTENTS

<b>4000</b>	<b>—ACTUARIAL EVIDENCE.....</b>	<b>4001</b>
<b>4100</b>	<b>SCOPE .....</b>	<b>4003</b>
<b>4200</b>	<b>GENERAL .....</b>	<b>4005</b>
4210	Circumstances of the work.....	4005
4220	Financial interest of the actuary .....	4006
4230	Role as expert.....	4006
4240	Testimony.....	4007
4250	Capitalized Values.....	4007
<b>4300</b>	<b>ACTUARIAL EVIDENCE CALCULATIONS, OTHER THAN CAPITALIZED VALUE OF PENSION PLAN BENEFITS FOR A MARRIAGE BREAKDOWN AND COMPUTATIONS OF CRIMINAL RATE OF INTEREST .....</b>	<b>4009</b>
4310	Assumptions and methods.....	4009
4320	Application of law .....	4010
<b>4400</b>	<b>CAPITALIZED VALUE OF AMOUNTS OTHER THAN PENSION PLAN BENEFITS FOR A MARRIAGE BREAKDOWN .....</b>	<b>4011</b>
4410	General .....	4011
4420	Assumptions and methods.....	4011
4430	Contingencies .....	4012
<b>4500</b>	<b>REPORTING .....</b>	<b>4013</b>
4510	External user report .....	4013
4520	Internal user report .....	4014
<b>4600</b>	<b>CAPITALIZED VALUE OF PENSION PLAN BENEFITS FOR A MARRIAGE BREAKDOWN....</b>	<b>4016</b>
4610	Scope .....	4016
4620	Method .....	4016
4630	Assumptions .....	4021
4640	Reporting: external user report.....	4024
<b>4700</b>	<b>COMPUTATIONS OF CRIMINAL RATE OF INTEREST.....</b>	<b>4025</b>
4710	General .....	4025
4720	Data .....	4025
4730	Method .....	4025

**4100 SCOPE**

.01 The standards in this part apply to actuarial evidence work.

.02 With respect to actuarial evidence work

- an expert is someone who is qualified by knowledge, skill, experience, training, or education to render an opinion or otherwise testify concerning the matter at hand; and
- an expert opinion is a conclusion drawn from actuarial knowledge and experience or from the application of one or more actuarial methods to a body of data.

.03 An expert opinion may be provided in a written report, oral or written testimony, or both.

.04 The provision of an expert opinion in connection with a dispute resolution proceeding involving a practice area such as insurance or pensions is work in both that practice area and the actuarial evidence practice area. The actuary would refer to the standards applicable to that practice area, in addition to the standards in this part.

**Examples**

.05 Examples of actuarial evidence work are:

- determination of the capitalized value of pecuniary losses arising as a result of an event such as personal injury, death, or wrongful dismissal from employment;
- determination of capitalized values of pensions in marriage breakdown proceedings;
- expert opinions given in litigation arising from work completed in respect of a pension plan or an insurance business;
- provision of services as an expert advisor to a mediating official, such as a judge;
- determination of effective rates of interest in cases of alleged charging of criminal interest rates; and
- provision of an expert opinion with respect to another actuary's work that is being challenged or in cases of alleged professional negligence.

.06 Work in a practice area, such as insurance or pensions, may be performed in an adversarial environment, but not involve an anticipated expert opinion for a dispute resolution proceeding. Such work would not normally be considered to be actuarial evidence work. Examples of such work, where the standards in this part are not applicable, are:

- pension plan valuations or costings related to union negotiations; and
- actuarial assistance with the valuation of an insurer, the merger of insurers, or the acquisition of an insurer.

### **Fact evidence**

.07 The standards in this part do not apply to the work of an actuary who is providing only fact evidence, and not an expert opinion. For example, an actuary testifying in his or her own defense in a proceeding related to professional negligence would normally be providing fact evidence, and not an expert opinion. As another example, an actuary may be providing evidence in a dispute resolution proceeding regarding his or her involvement in work performed in a practice area such as insurance or pensions. If the circumstances were not adversarial and there was no anticipation of litigation at the time the work was performed, the actuary's evidence in the dispute resolution proceeding would normally be fact evidence and not an expert opinion. The standards in this part would apply, however, if the actuary's role includes providing an expert opinion in a dispute resolution proceeding.

### **Litigation advice**

.08 The terms of an appropriate engagement may require that the actuary provide only litigation advice, other than an expert opinion, such as assisting counsel or a client in identifying and analyzing legal or actuarial issues, advising in connection with relevant case law, and preparing for cross-examination of opposing witnesses. In such cases, provided that the actuary makes it clear that the work product does not represent an expert opinion, the standards in this part would not apply.

.09 The terms of an appropriate engagement may require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion. If work related to the expert opinion meets the definition of actuarial evidence work, then the standards in this part would apply to that aspect of the engagement.

### **Additional guidance**

.10 The actuary may be uncertain as to whether all or part of the engagement meets the conditions to be classified as actuarial evidence work. In such case, the actuary would seek clarification from the chair or vice-chair of the Committee on Actuarial Evidence of the Canadian Institute of Actuaries and the standards in this part would apply for that portion of the engagement that is actuarial evidence work.

**4200 GENERAL****4210 CIRCUMSTANCES OF THE WORK**

- .01 *When completing actuarial evidence work, the actuary should take into account the circumstances of the work. [Effective Month XX, 20XX]*
- .02 The circumstances of the work would include
- relevant legislative or regulatory provisions;
  - rules of civil procedure and rules of court in the relevant jurisdictions;
  - other rules that may be applicable to the dispute resolution proceeding;
  - established legal principles relevant to the work; and
  - terms of an appropriate engagement under which the work is being performed.
- .03 Relevant legislative or regulatory provisions may include
- provisions relating to allowable pecuniary damages under automobile insurance legislation or regulations;
  - provisions related to division of assets under a marital property act or regulations; and
  - provisions relating to pensions, benefits, insurance, or workers' compensation.
- .04 Rules of civil procedure and rules of court, as well as other rules that may be applicable to the dispute resolution proceeding, may include
- mandated assumptions;
  - role of experts; and
  - duties and obligations of experts.
- .05 Established legal principles relevant to the work may address
- issues relevant to the actuary's current engagement; and
  - role and obligations of experts.
- .06 The terms of an appropriate engagement would define the role of the actuary and the purpose, context, and scope of the work. An engagement for actuarial evidence work would not be appropriate if it would impair the ability of the actuary to complete independent and objective work.

- .07 Significant terms of an appropriate engagement may stipulate one or more of
- assumptions to be used in the actuary's work;
  - methods to be used in the actuary's work; and
  - various scenarios to be considered by the actuary.
- .08 An engagement may be appropriate if its terms require that the actuary assist his or her client or counsel with challenging the application or a particular interpretation of existing precedent, law, or regulation. Nothing in this part is intended to prevent the actuary from assisting with a challenge of the application or a particular interpretation of existing precedent, law, or regulation, even if the result of such challenge of the application or a particular interpretation would, in the opinion of the actuary, be inconsistent with otherwise accepted actuarial practice. If an engagement would impair the actuary's ability to conform to the rules, such engagement would not be appropriate.

#### **4220 FINANCIAL INTEREST OF THE ACTUARY**

- .01 *The amount of the actuary's compensation should not be related to the outcome of the matter (e.g., litigation) in connection with which the work is done. [Effective Month XX, 20XX]*
- .02 For example, contingency fees which depend on the outcome of litigation would not be appropriate.

#### **4230 ROLE AS EXPERT**

- .01 *The actuary's actuarial evidence work and expert opinion should be independent and objective.*
- .02 *The actuary's role as an expert should be to assist the court or other entity in the dispute resolution proceeding in its search for truth and justice, and the actuary should not be an advocate for one side of the matter in dispute.*
- .03 *Where the terms of the engagement require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion, the litigation advice aspect should not influence the objectivity of the expert opinion. [Effective Month XX, 20XX]*
- .04 Where the actuary is providing both litigation advice that is not actuarial evidence work and an expert opinion, the actuary would have a clear understanding of the differences between the two components of the engagement, would clearly identify in any work product which component of the engagement is involved, and would ensure that the litigation advice role does not impair his or her ability to provide the expert opinion.

**4240 TESTIMONY**

- .01 *The actuary's testimony should be independent, objective, and responsive.*
- .02 *Where the terms of the engagement require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion, the actuary should be aware that full disclosure of all work and work products with respect to both aspects of the engagement may be required in any testimony.*
- .03 *In the course of providing testimony in the dispute resolution proceeding, the actuary should*
- *present a balanced view of the factors surrounding the actuarial aspects of the questions put to him or her;*
  - *answer all the questions that are asked on the basis of his or her own best assessment of all the relevant factors;*
  - *apply best efforts to ensure that the evidence is clear and complete, that the information the actuary is providing will not be misunderstood or misinterpreted and that the audience will be able to use it correctly; and*
  - *indicate when a particular issue or question falls outside his or her expertise.*
- .04 *The actuary should respond truthfully and fully to questions posed in the course of providing testimony, but the actuary need not volunteer information which is beyond the scope of the question posed. [Effective Month XX, 20XX]*
- .05 *Testimony is the actuary's communication presented in the capacity of an expert witness in any dispute resolution proceeding where the actuary may be cross-examined. Such testimony may be oral or written, direct or responsive, formal or informal.*
- .06 *When responding to a direct question relating to any error or shortcoming the actuary perceives in the report of another actuary or expert witness, the actuary would respond truthfully and fully, notwithstanding paragraph 4510.09.*

**4250 CAPITALIZED VALUES**

- .01 *The actuary should calculate the capitalized value of future amounts payable in respect of an individual using the actuarial present value method. [Effective Month XX, 20XX]*
- .02 *Actuarial evidence work frequently deals with the determination of the capitalized value of amounts for purposes of litigation or an agreement at law. These amounts are often payable in respect of an individual and sometimes in respect of a group of individuals. Such calculations must often be performed within a framework established by law, regulation, and/or legal precedent.*
- .03 *Payment of the capitalized value is an alternative to payment of defined amounts to which an individual is entitled. Often the courts and others have recourse to require payment of a capitalized value when payment of the defined amounts comprising that value is not practical or not desired.*
- .04 *Calculation of the capitalized value is within the domain of actuarial practice.*

- .05 The actuary would not calculate the capitalized value of future amounts that are subject to any contingent event as the present value of an annuity certain. For example, when using the actuarial present value method in respect of a life annuity, the capitalized value of each life annuity payment is weighted by the probability of survival to the date of that payment. Under this method, the present value of possible overcompensation in an individual circumstance is balanced by the present value of possible undercompensation.

**4300 ACTUARIAL EVIDENCE CALCULATIONS, OTHER THAN CAPITALIZED  
VALUE OF PENSION PLAN BENEFITS FOR A MARRIAGE BREAKDOWN  
AND COMPUTATIONS OF CRIMINAL RATE OF INTEREST**

**4310 ASSUMPTIONS AND METHODS**

- .01 *For any actuarial evidence calculation, the assumptions and methods selected by the actuary should be appropriate in the aggregate, taking into account the purpose of the work and the parts of the standards that are applicable to the actuary's work.*
- .02 *The assumptions selected by the actuary should be best estimate assumptions unless there is a reason for incorporating margins for adverse deviations.*
- .03 *The actuary should ensure that any assumptions or methods stipulated by the terms of the engagement are plausible.*
- .04 *The assumptions and methods used by the actuary should take account of applicable law, regulation, court practice, and established legal principles relevant to the work.*
- .05 *The assumptions and methods selected by the actuary should not be influenced by the party to the dispute resolution proceeding that has retained the actuary. [Effective Month XX, 20XX]*
- .06 Satisfactory reasons for incorporating a margin for adverse deviations in an assumption include, but are not limited to,
- the assumption or the requirement for a margin for adverse deviations is mandated by law, regulation, court practice, or established legal principles relevant to the work; and
  - the actuary's work relates to a practice area such as insurance or pensions, and the standards for that practice area require or permit the inclusion of a margin for adverse deviations for such work.
- .07 Notwithstanding paragraph 4310.03, the terms of an appropriate engagement may stipulate assumptions or methods that are not considered plausible by the actuary. In such case, if the actuary completes the work in accordance with the terms of the engagement, the actuary would report the deviation from accepted actuarial practice in Canada.
- .08 The terms of the engagement may require that the actuary complete calculations for related items, such as one calculation for the capitalized value of a pecuniary loss and another calculation for the income tax gross-up. The underlying assumptions would be consistent for the calculation of these related items. In this example, the actuary would use the same underlying assumptions, such as the same real rate of interest, for both the calculation of the capitalized value of the loss and the calculation of the income tax gross-up.
- .09 Where there is insufficient data to support a particular assumption regarding a contingency incorporated in the actuary's work, the actuary may present a range of results.

**4320 APPLICATION OF LAW**

- .01 In a situation where law, regulation, court practice, or established legal principles relevant to the work mandates that a method or assumption be adopted in an actuarial evidence calculation, a broad interpretation of accepted actuarial practice in Canada is appropriate, so that in most such situations the law, regulation, court practice, or established legal principles relevant to the work would be considered to be within the range of accepted actuarial practice in Canada.
- .02 If the actuary is unsure as to whether such a mandated assumption or method is within accepted actuarial practice in Canada, he or she would consult with the chair or vice-chair of the Committee on Actuarial Evidence of the Canadian Institute of Actuaries.
- .03 Where an assumption is mandated by law, regulation, court practice, or established legal principles relevant to the work, such assumption may be outside of the range of assumptions that the actuary considers to be reasonable. Subsection 1720 provides additional guidance for these situations.

**4400 CAPITALIZED VALUE OF AMOUNTS OTHER THAN PENSION PLAN  
BENEFITS FOR A MARRIAGE BREAKDOWN**

**4410 GENERAL**

- .01 A capitalized value relates to amounts payable at various times, each amount subject to various contingencies related to the individual or to the individual's dependants. Examples of situations where capitalized values may be calculated are

<u>Event</u>	<u>Capitalized Value of:</u>
Disability	individual's loss of earnings, loss of household services, and/or cost of extraordinary expenses attributable to the disability.
Death	dependant's loss of financial support and/or loss of household services.
Wrongful dismissal	individual's loss of earnings, pension benefits and/or employer-sponsored benefits other than pensions.
Marriage breakdown	individual's support obligations.

**4420 ASSUMPTIONS AND METHODS**

**Past loss**

- .01 In some cases, the capitalized value is the present value of amounts payable both before and after the date at which the capitalized value is established. For example, in an accident caused by negligence, litigation of the damages may result in the capitalized value becoming payable several years after the accident. Then the damages consist of those in respect of both the period before and the period after the date at which the capitalized value is established, called "past losses" and "future losses", respectively.

**Income tax**

- .02 Subject to the terms of the engagement, the actuary may include an appropriate allowance in the capitalized value calculation for the expected effect of income tax, taking account of applicable law, regulation, court practice, and established legal principles relevant to the work. The whole of the actuary's report would deal with income tax in an internally consistent way, and the report would fully disclose the assumptions and methods used.

**Investment expenses**

- .03 Subject to the terms of the engagement, the actuary may include an appropriate allowance in the capitalized value calculation for any expenses expected with respect to the future investment, management or administration of any settlement amount, taking account of applicable law, regulation, court practice, and established legal principles relevant to the work. The whole of the actuary's report would deal with such investment expenses in an internally consistent way, and the report would fully disclose the assumptions and methods used.

**4430 CONTINGENCIES**

- .01 *The actuary should consider incorporating any material contingency where, in the actuary's opinion, there are adequate legal, theoretical, or empirical supporting grounds to enable this. The actuary should disclose the omission from the work of any contingencies he or she considers material.*
- .02 *If the actuary gives advice on the effect of a specific contingency, that advice should be based on an assessment of that contingency, both alone and in combination with other factors, using appropriate actuarial methods. [Effective Month XX, 20XX]*
- .03 Where the actuary has prepared results under more than one scenario, the actuary's report would show the results of the actuarial calculations separately for each scenario and identify which contingencies have been incorporated in each scenario. For example, the results of the actuarial calculations under one scenario may include precise recognition of only net investment return and mortality. The results taking into account any other provision for contingencies would be prepared under another scenario and would be reported separately.
- .04 The actuary would comment on every contingency that has been taken into account in making the calculations. The actuary would also state that there may be other contingencies that could have a positive or negative effect and that have not been taken into account.
- .05 Recognition of a contingency may create a positive or negative effect on a calculation.

**4500 REPORTING****4510 EXTERNAL USER REPORT**

- .01 *For work pursuant to this part, any external user report that is prepared should*
- *identify the person for whom the report was prepared and, if that person is acting on behalf of a party to the dispute, that party to the dispute;*
  - *state the effective date of the report and the effective date of any actuarial opinions and calculations in the report;*
  - *describe any significant terms of the appropriate engagement that are material to the actuary's work, including the role of the actuary, the scope and purpose of the work, any limitations or constraints on the work and any stipulated assumptions or methods;*
  - *where the actuary is aware of circumstances where the independence of his or her expert opinion may reasonably be questioned, disclose such circumstances;*
  - *disclose the results of the calculations, if any;*
  - *describe the data, methods, and assumptions used for the calculations, including the terms and the amounts of the payments relevant to any calculations, for each of the scenarios presented in the report;*
  - *identify the assumptions and methods which are constrained by law, regulation, court practice, or established legal principles relevant to the work;*
  - *identify the differences between scenarios where the results of multiple scenarios are presented;*
  - *identify any margins for adverse deviations that are included, except where the assumption or method is mandated by law, regulation, court practice, or established legal principles relevant to the work, and the rationale for inclusion of any identified margins for adverse deviations;*
  - *disclose the extent of the actuary's reliance on others;*
  - *list the sources of information on which the actuary has relied; and*
  - *include any other information required in accordance with the rules of procedure for the relevant jurisdiction.*
- .02 *The actuary's external user report should be sufficiently detailed to enable another actuary to assess the reasonableness of results. [Effective Month XX, 20XX]*

.03 The actuary would prepare any draft reports and other documentation, taking into account the potential disclosure of such documents that may be required as part of the dispute resolution proceedings.

.04 Where the actuary reports the results of a capitalized value calculation without reservation, the disclosure wording that may be used is

I have determined the capitalized value of those aspects of the pecuniary damages described herein and prepared this report in accordance with accepted actuarial practice in Canada. It is my opinion that the assumptions and methods for which I have taken responsibility are appropriate in the circumstances of this case and for the purpose of this report.

Respectfully submitted,

[actuary]

Fellow, Canadian Institute of Actuaries

### **Reporting with reservation**

.05 Stating that the reporting requirements have not been followed does not excuse an actuary from these reporting standards.

.06 Reporting with reservation may relate to insufficient or unreliable data, or to the use of more approximate calculations than would normally be used due to time and expense constraints, but in no event shall reporting with reservation excuse an actuary from these reporting standards.

.07 Notwithstanding paragraph 4320.01, the circumstances of the work may result in deviation from accepted actuarial practice in Canada. For example, the terms of the engagement may require that the actuary use an assumption or method that is outside of the range that the actuary considers appropriate or plausible or that the actuary assist counsel with challenging a specific interpretation of the law. In such case, the actuary would disclose such deviation in the report.

### **New information**

.08 Where new information becomes available after the actuary has completed his or her report, the actuary would consider the potential effect of such information and advise his or her client on a timely basis, if appropriate and subject to the terms of the engagement.

### **Disclosure of other expert's report**

.09 The external user report need not disclose any error or shortcoming that the actuary identifies in the report of another actuary or other expert witness.

## **4520 INTERNAL USER REPORT**

.01 *Unless an internal user report conforms to the recommendations for an external user report, an internal user report should contain a proviso that it is not to be given to an external user or to be used in the dispute resolution proceeding. [Effective Month XX, 20XX]*

- .02 For the purpose of determining whether or not the actuary is following standards, an internal user report continues to be an internal user report even if, in breach of the proviso required by paragraph 4520.01, it is given to an external user or used in the dispute resolution proceeding.

<b>4600 CAPITALIZED VALUE OF PENSION PLAN BENEFITS FOR A MARRIAGE BREAKDOWN</b>
---

**4610 SCOPE**

- .01 The standards in this section 4600 apply to an actuary's advice when the capitalized value of a pension plan's benefits is needed for calculating the value of family property at the breakdown of the marriage of a plan member.
- .02 For the purposes of this section 4600, "plan" means "pension plan" and is broadly defined, including not only a plan that is registered under the federal Income Tax Act but also an unregistered plan, such as a retirement compensation arrangement and an unfunded pension plan.
- .03 The standards in this section 4600 do not apply when the purpose of the calculation is to calculate an amount, in respect of a pension benefit, to be paid
- by the plan to the plan member or beneficiary as a result of the plan member's death or termination of membership; or
  - by a party other than the plan in connection with litigation other than in respect of a marriage breakdown.
- .04 The standards in this section 4600 may provide useful guidance for similar calculations for other deferred compensation arrangements, such as a partnership retirement buy-out agreement, a sick leave buy-out plan, and a retirement lump sum allowance, but they do not provide useful guidance for current compensation arrangements such as group life and disability insurance.
- .05 The standards in this section 4600 do not apply when applicable legislation mandates a different basis for the calculation of the value of a pension for family property purposes at the breakdown of the marriage of a plan member.

**4620 METHOD**

- .01 *The benefits to be valued are the plan's benefits in respect of the member (including survivor benefits vested in the member's spouse) at the calculation date or calculation dates.*
- .02 *The value of the member's benefits is the capitalized value of the benefits to be valued, but assuming that the member has no spouse. The value of the survivor benefits vested in the member's spouse is the excess, if any, of the capitalized value of the benefits to be valued over the value of the member's benefits. [Effective Month XX, 20XX]*

**Principle**

- .03 The capitalized value would conform to the intent of applicable family law. The capitalized value may, thus, differ from the corresponding transfer value from a registered pension plan. Transfer values typically include only unconditional rights, whereas property under family law typically includes both vested and contingent rights. Thus, such contingent rights as early retirement rights, bridging benefits, and ad hoc inflation adjustments are property to be considered in a valuation for marriage breakdown purposes.
- .04 The standards in this section will often produce more than one result, by taking account of alternative possibilities for
- pension commencement age;
  - future increases in accrued benefits before and after retirement;
  - allocation of value earned before marriage;
  - inclusion or exclusion of non-vested benefits; or
  - special circumstances, such as buy-back or transfer of benefits.
- .05 If the actuary has reason to believe that the plan's financial position is so weak that payment of the capitalized benefits is doubtful, then the actuary would so report, making clear that allowance for this factor could significantly reduce the present values calculated, given that such present values have been calculated assuming that the plan would meet its obligations. In making that assessment, the actuary would take into account any benefits payable under provincial pension guarantee legislation. The actuary would take into account further the extent to which plan benefits are provided through a retirement compensation arrangement and/or an unfunded pension plan.
- .06 The terms of the actuary's engagement may determine some or all of
- the relevant law or jurisdiction;
  - the calculation date or calculation dates;
  - retirement age, but only if established as a matter of fact pursuant to an agreement of the parties or a determination by the court; and
  - inclusion or exclusion of the effect of income taxes.

**Benefits to be valued**

- .07 The benefits to be valued would include all of the plan's contractual benefits, including pre- and post-retirement death benefits, and any contractual inflation protection and non-contractual inflation protection.
- .08 The benefits to be valued would exclude spousal survivorship benefits, except to the extent that these may have vested upon retirement prior to the calculation date.

- .09 The form of plan benefits that would be valued would be the most favourable of any optional form available to the member with no spouse. For example, a 15-year guaranteed pension option would have a greater value than a five-year guaranteed pension option for a member with impaired mortality. However, if the applicable law disregards a particular optional form of plan benefit, then the actuary may omit that option in calculating the capitalized value.
- .10 The benefits may include or exclude any non-vested benefits. Non-vested benefits may be included in the values, or may be illustrated separately, and would be valued without discount for the possibility of future forfeiture. Separately from the illustrated values, the report may contain comments including suggestions for recognizing the contingent nature of non-vested benefits. The references in this paragraph to inclusion of values of non-vested benefits apply in jurisdictions where the inclusion of such values depends on the plan provisions applicable to a deferred vested member. In other jurisdictions, the inclusion of such values depends on the extent to which continued employment is assumed.
- .11 The capitalized values would include ancillary benefits that are provided by the plan as of the calculation date and are expected to become available to the member after the calculation date if the plan member continues as an active member of the plan, but are not available to the member as of the calculation date, such as unreduced early retirement benefits.
- .12 The actuary would disclose whether or not the benefits valued include benefits that will be provided by the plan after the calculation date and that are expected to become available to the member after the calculation date if the plan member continues as an active member of the plan, but are not available to the member as of the calculation date, for example
- a future increase in benefits as a result of a collective bargaining agreement; or
  - a future increase in benefits as a result of an adopted plan amendment.
- .13 The benefits referred to in paragraph 4620.11 are those payable by the plan as a going concern, and not those payable on plan wind-up, if different, unless the plan has been fully wound up or partially wound up with respect to the plan member.
- .14 Where various legal interpretations for a specific question appear possible, the actuary would obtain clarification of such unclear matters from the instructing lawyer or from another authoritative source. If that is not possible, the actuary would advise that various interpretations exist, and would report the effects of these interpretations or report values that, in the actuary's opinion, are most consistent with accepted actuarial practice.

**Calculation date**

- .15 The calculation date may be single or multiple, depending on the circumstances and applicable law. The possibilities include
- the date of separation;
  - the date of marriage or commencement of cohabitation;
  - the date of trial; and
  - the report date.
- .16 If the use of an alternative calculation date, close to the calculation date, would significantly affect the capitalized value, then the actuary would so report. Examples are
- the date at which the member becomes eligible for early retirement with unreduced benefits; and
  - the date at which the plan is amended to enhance its benefits.

**Applicable standards**

- .17 The applicable standards are those in effect at the calculation date. If there are two or more calculation dates, however, and if the standards applicable to one differ from the standards applicable to another, then the actuary would use the same standards for all calculation dates. The choice of standards would be governed by the latest of the calculation dates, except that the choice would be governed by the base calculation when the actuary selects an alternative calculation date, close to the calculation date, in accordance with the previous paragraph.

**Future service**

- .18 If the member's employment terminated before the calculation date and was not reinstated at the report date, then the actuary would include nothing in the capitalized value on account of assumed service after the calculation date, even if reinstatement is possible after the report date. The actuary may, however, report a useful alternative calculation that assumes reinstatement.
- .19 If the member's employment terminated between the calculation date and the report date and was not reinstated at the report date, then the actuary may, with disclosure, exclude from the capitalized value any non-vested benefits forfeited by the termination of employment.

**Effect on capitalized value of minimum benefits**

- .20 In calculating the capitalized value, the actuary would take account of any minimum benefit related to member contributions, for example
- the so-called "50% minimum employer contribution rule"; and
  - a minimum benefit equal to the member's contributions accumulated with interest.
- .21 The minimum benefit would not necessarily be limited only to the value determined on a termination of employment assumption. The capitalized value would incorporate the relevant minimum benefit rule according to the event.

**Effect on capitalized value of salary increases after the calculation date**

- .22 If the pension is an earnings-related benefit, then the possibilities are
- the capitalized value takes account of all the member's salary increases—general increases, promotional increases, and seniority increases—after the calculation date;
  - the capitalized value takes account of the member's salary increases which result from general (as opposed to promotional and seniority) salary increases after the calculation date. A rationale for this possibility is that the member's spouse has no entitlement to the effect of promotions or seniority increases which the member earns after the calculation date;
  - the capitalized value does not take account of the member's salary increases after the calculation date. A rationale for this possibility is that the member's spouse has no entitlement to the effect of salary increases, which depend on the member's continued employment after the calculation date.
- .23 The assumed salary increases after the calculation date would be consistent with the prescribed economic assumptions, except that salary increases revealed by subsequent events would be substituted for the corresponding assumed increases.

**Effect on capitalized value of non-contractual indexing of pensions and other benefit adjustments**

- .24 In calculating the capitalized value, the actuary would assume continuance of the plan's established practice or current policy, if any, for non-contractual indexing for inflation of pensions after pension commencement age and of vested deferred pensions before pension commencement age, unless there is explicit reason not so to assume. The actuary would report
- the established practice or current policy; and
  - the indexation assumption.
- .25 If that assumption is doubtful, then the actuary would also report the numerical effect on the capitalized value of helpful alternative assumptions.
- .26 In the case of a final or best average earnings plan, there would be no allowance made for indexing of vested deferred pensions before pension commencement age in the period for which salary increases are projected after the calculation date.

**Effect on capitalized value of income tax**

- .27 Income tax may be taken into account in the calculation. If it is to be taken into account, then the actuary would do so by calculating the average income tax rate based upon the member's anticipated retirement income computed in "current" dollars, including accrued and projected future pension income, Canada Pension Plan, Old Age Security, and other anticipated income, and continuance of the tax environment at the report date or the calculation date; i.e., assuming continuation of the existing tax rates, brackets, surtaxes, and clawbacks, applied to the projected income on retirement expressed in "current" dollars. The actuary would disclose which date was used and if the tax environment is as at the report date, would disclose the use of any tax provisions that have not yet been enacted.
- .28 The actuary may report useful alternative calculations that take income tax into account.

**4630 ASSUMPTIONS**

- .01 *The actuary should select all assumptions, except those depending upon interpretation of applicable law.*

**Mortality rates**

- .02 *The actuary should assume mortality rates in accordance with a mortality table promulgated from time to time by the Actuarial Standards Board for the purpose of these calculations, modified, if appropriate, to reflect the member's or the member's spouse's impaired health, if medically determinable. [Effective Month XX, 20XX]*
- .03 Tobacco use (or lack of tobacco use) would not, in itself, be sufficient reason to modify the mortality rates identified above.
- .04 Use of unisex mortality rates would not be appropriate except that it may be appropriate in situations where the plan member has terminated employment and has elected, or has the option to elect, a transfer value that was or would be calculated under a unisex basis.

**Retirement age**

- .05 If the retirement age is a matter of fact (i.e., one agreed by the parties or determined by the court), then the actuary would report the selection of the assumed retirement age as such.
- .06 The retirement of the member before the report date does not necessarily preclude assumption of a different retirement age.
- .07 Unless paragraph 4630.05 applies, the actuary would usually assume and report the results for a range of useful retirement ages, based on data at the calculation date, which would include
- the earliest age at which the member is entitled to a pension whose amount is not reduced on account of early retirement, assuming that the member's service ceases at the calculation date;
  - the earliest age at which the member is entitled to a pension whose amount is not reduced on account of early retirement, assuming that the member continues in service either to that age or to an earlier age after the calculation date;

- if there is an upper limit to the number of years of credited service, the earliest age at which the member has attained, or will attain, that upper limit and becomes entitled to a pension whose amount is not reduced on account of early retirement; and
- the normal retirement age.

### Economic assumptions

.08 The actuary should select economic assumptions that depend on the reported rates for the applicable CANSIM series for the calendar month immediately preceding the month in which the calculation date falls.

.09 The actuary should determine from the CANSIM series the following four factors:

CANSIM Series	Description	Factor
VI22487	average long (>10 yrs) Government of Canada bond yields (final Wednesday of month)	$G_L$
VI22544	long-term Government of Canada benchmark bond yield, annualized (final Wednesday of month)	$b_L$
VI22553	long-term Government of Canada real return bond yield, annualized (final Wednesday of month)	$r_L$
$(1 + b_L)/(1 + r_L) - 1$	break-even inflation rate	BEIR

Note that the factors determined above do not reflect the reported CANSIM series, but the annualized value of the reported figure.

### Inflation and indexing

.10 The actuary should calculate the projected benefit obligation for a pension that is fully indexed to increases in the Consumer Price Index using an assumed inflation rate of EI. For pensions that are partially indexed to increases in the Consumer Price Index, the actuary should derive inflation rates in a like manner by applying to the stipulated inflation rates the partial indexing formula of the plan.

.11 The actuary should determine the assumed rate of inflation EI as

- first 20 years  $EI_{0-20} = BEIR$
- after 20 years  $EI_{20+} = 2.25\%$

EI should be rounded to the nearest multiple of 0.01%.

.12 Where increases in pensions are related to increases in the average wage index, the actuary should assume that the average wage index will increase at rates that are one percentage point higher than EI.

- .13 *The capitalized value of a fully- or partially-indexed pension should be at least equal to the capitalized value applicable to a non-indexed pension in the same amount and having similar characteristics. [Effective Month XX, 20XX]*
- .14 Where the plan so provides, the indexing in any of the above arrangements may be modified by
- applying a maximum or minimum annual increase, with or without carry forward of excesses or deficiencies to later years; or
  - prohibiting a decrease in a year where the application of the formula would otherwise cause a decrease.

The actuary would then adjust the expected inflation rate for a year to reflect the probability and extent of modification for that year.

- .15 If the pension is indexed using an “excess investment return” approach, the expected indexation rate would be determined using the “floor rate” and the interest rates determined in accordance with paragraph 4630.18 to produce an expected indexation rate consistent with excess interest situations.
- .16 For a pension in a plan that has a policy or a history of indexing on an ad hoc basis, the actuary would determine an indexation rate consistent with the indexing policy or history.

### **Interest rates**

- .17 *The actuary should calculate two interest rates, one applicable to the first 20 years following the calculation date, and the second one applicable to all years thereafter.*
- .18 *The actuary should determine the interest rates as*
- *first 20 years*                     $i_{0-20} = G_L + 0.50\%$
  - *after 20 years*                 $i_{20+} = 5.50\%$

*Prior to calculating the capitalized value, the actuary should round the rates of interest determined in accordance with this paragraph to the nearest multiple of 0.1%.*

- .19 *The actuary should calculate the capitalized value of a pension using a two-tier interest rate of*
- *$i_{0-20}$  for the first 20 years, and*
  - *$i_{20+}$  thereafter. [Effective Month XX, 20XX]*

### **Assumptions selected by client**

- .20 The actuary would obtain instructions from the client with respect to assumptions dependent upon the interpretation of applicable law.
- .21 The actuary would report his or her reliance on an assumption selected by the client.

#### **4640 REPORTING: EXTERNAL USER REPORT**

.01 Here is model text if the actuary reports without reservation with regard to marriage breakdown:

I have determined the capitalized value of the pension benefits and prepared this report in accordance with accepted actuarial practice in Canada, for purposes of settlement of a division of pension benefits resulting from marriage breakdown under the [Family Law Act] of [province]. In my opinion, the capitalized values are appropriate for this purpose.

Respectfully submitted,

[actuary]

Fellow, Canadian Institute of Actuaries

## 4700 COMPUTATIONS OF CRIMINAL RATE OF INTEREST

### 4710 GENERAL

- .01 The standards in section 4700 apply to an actuary's advice when determining whether the interest rate for a particular agreement or arrangement is a "criminal rate".
- .02 The Criminal Code of Canada defines "criminal rate" as meaning an effective annual rate of interest calculated in accordance with generally accepted actuarial practices and principles that exceeds 60 percent on the credit advanced under an agreement or arrangement.

### 4720 DATA

- .01 *The actuary should ascertain or make assumptions regarding the quantum and timing of all amounts actually or deemed to be advanced as well as all amounts actually or deemed to be repaid either as principal or as "interest" as defined in the Criminal Code.*
- .02 *The actuary should report all data used in the calculation, and their sources. [Effective Month XX, 20XX]*
- .03 If data are not clear from the initial terms of the engagement, the actuary would obtain clarification from his or her client (for example, whether or not a particular item falls within the statutory definition of "interest," or the timing of a particular payment that could be made on various alternate dates).

### 4730 METHOD

- .01 *The actuary should calculate and report the effective rate of interest compounded annually "i" such that the following equality is established.*

$$\sum_{r=1}^m A_r \times (1+i)^{t_r} = \sum_{s=1}^n B_s \times (1+i)^{t_s}$$

where

- *m is the total number of payments advanced by the lender to the borrower;*
- *n is the total number of payments repaid by the borrower to the lender;*
- *A<sub>r</sub> is the amount of the r<sup>th</sup> payment advanced by the lender;*
- *B<sub>s</sub> is the amount of the s<sup>th</sup> payment repaid by the borrower, consisting of principal, "interest" as defined, or a combination of both;*

- $t_r$  is the period measured in years (including fractional parts of a year) between the time that the  $r^{\text{th}}$  payment is advanced by the lender to the borrower and the time on which the final repayment is made by the borrower to the lender; and
  - $t_s$  is the period measured in years (including fractional parts of a year) between the time that the  $s^{\text{th}}$  payment is repaid by the borrower to the lender and the time on which the final payment is made by the borrower to the lender. [Effective Month XX, 20XX]
- .02 If the calculation produces only one result, then the actuary would report that result. If the calculation produces more than one result, then the actuary would report only those that are positive and real.
- .03 The formula in paragraph 4730.01 applies in most, but not all, situations.