

## *Report*

# **CICA – CIA Guide: Audits of Financial Statements That Contain Amounts That Have Been Determined Using Actuarial Calculations**

**Joint CICA/CIA Task Force on Developing  
Non-Authoritative Guidance**

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## Memorandum

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

**From:** Tyrone G. Faulds, Chair  
Practice Council

**Date:** January 27, 2011

**Subject:** **Report of the Joint CICA/CIA Task Force on Developing Non-Authoritative Guidance: CICA – CIA Guide: Audits of Financial Statements That Contain Amounts That Have Been Determined Using Actuarial Calculations**

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This non-authoritative guide provides information that may help auditors to understand and apply the requirements of the Canadian Auditing Standards (CAS) when conducting audits of financial statements that contain amounts determined using actuarial calculations whether or not determined by, or with the assistance of, an actuary. It was developed by a joint task force of the Canadian Institute of Chartered Accountants and the Canadian Institute of Actuaries.

The guide reflects the current professional standards for auditors, accountants and actuaries and is based on guidance contained in previously effective Assurance and Related Services Guidelines. It incorporates substantively all of AuG-43, *Audit of Policy Liabilities of Insurance Companies* and aspects of AuG-29, *Audit of Employee Future Benefits – Defined Benefit Plans*.

Financial statements may include amounts determined by using actuarial calculations, which adds complexity and may increase the risk of material misstatements when these amounts are material to the financial statements as a whole. For example, such amounts may relate to liabilities of defined benefit pension plans or insurance contracts of insurance enterprises.

Referring to this publication may provide assistance in auditing any amount determined by using actuarial calculations, regardless of the type of entity whose financial statements are being audited, the nature of the amount being audited and its significance to the financial statements, and whether or not the amount was determined by, or with the assistance of, an actuary.

CICA – CIA Guide: Audits of Financial Statements That Contain Amounts That Have Been Determined Using Actuarial Calculations is available on the [CICA](#) and the [CIA](#) websites.

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# Audits of Financial Statements that Contain Amounts that Have Been Determined Using Actuarial Calculations

January 2011

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## NOTICE TO USERS OF THIS GUIDE

This Guide was commissioned by the Canadian Institute of Chartered Accountants and the Practice Council of the Canadian Institute of Actuaries and developed by a Joint Task Force. The material in this Guide represents the views of this Task Force.

The contents of this Guide have not been adopted, endorsed, approved, disapproved or otherwise acted upon by the Auditing and Assurance Standards Board (AASB) or by any CICA board, committee, or the governing body or membership of the CICA or any provincial Institute/Ordre or the Actuarial Standards Board or the Practice Council of the CIA.

This Guide is intended to help auditors understand and apply the requirements in the Canadian Auditing Standards (CASs) in conducting audits of financial statements that contain amounts that have been determined using actuarial calculations whether or not determined by or with the assistance of an actuary.

This Guide is based on the following professional standards as at the date of publication of this Guide:

- CASs, which are the generally accepted auditing standards issued by the AASB, effective for audits of financial statements for periods ending on or after December 14, 2010; and
- Standards of Practice issued by the Actuarial Standards Board and published by the Canadian Institute of Actuaries.

These professional standards may be changed by subsequent pronouncements.

Practitioners are expected to use professional judgment in determining whether the material in this Guide is both appropriate and relevant to the circumstances of each audit engagement.

Any comments regarding material in this Guide would be appreciated, and should be sent to both:

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## INTRODUCTION AND SCOPE

- 1 This Guide may be useful to an auditor engaged to carry out an audit of financial statements in accordance with Canadian Auditing Standards (CASs) where the financial statements prepared by management include amounts determined by using actuarial calculations whether or not determined by or with the assistance of an actuary.
- 2 Examples of amounts determined by using actuarial calculations include the following:
  - (a) insurance contracts for:
    - (i) a life insurance enterprise, including participating and non-participating accounts and reinsurance amounts;
    - (ii) a reinsurance enterprise and retroceded amounts; and
    - (iii) a property and casualty insurance enterprise, including deferred policy acquisition costs, unearned premium reserves, premium deficiency reserves, claims provisions, salvage and subrogation, and reinsurance amounts;
  - (b) financial arrangements that are classified as insurance contracts (i.e., have similar characteristics to insurance contracts but may not be clearly identified as an insurance contract);
  - (c) self-insurance liabilities and warranty provisions;
  - (d) public personal injury compensation plan liabilities; (i.e., those plans, which include workers' compensation boards, that have monopoly powers, require compulsory coverage other than for those groups excepted by legislation or regulations and have authority to set assessment rates);<sup>1</sup>
  - (e) defined benefit employee future benefit costs and obligations of a plan sponsor:
    - (i) pension income;
    - (ii) health care benefits;
    - (iii) life insurance coverage; and
    - (iv) short- and long-term disability income benefits; or
  - (f) liabilities of an employee future benefit plan:
    - (i) pension plan;
    - (ii) health care benefit plan; and
    - (iii) short- and long-term disability plans.
- 3 The use of actuarial calculations in determining the amounts in the above examples adds complexity, which may increase the risk of material misstatement when these amounts are material to the financial statements as a whole. Because of the complexity and specialized nature of these amounts, they are ordinarily determined by or with the assistance of an actuary; however, in some cases, management may elect not to use an actuary.
- 4 The focus of the Guide is on amounts determined by using actuarial calculations that are complex, significant to the financial statements as a whole, and where there is a risk of material misstatement, regardless of who determined the amounts. There may be additional risks when

<sup>1</sup> Public personal injury compensation enterprises often employ terminology that can differ from that used by insurance enterprises and the context is significantly different as funding policy should be considered.

management determines the amounts using actuarial calculations without the use of an actuary that the auditor will need to address.

- 5 Auditors may find this Guide helpful when auditing amounts using actuarial calculations in other circumstances, such as self-insurance liabilities and warranty provisions or financial arrangements that have similar characteristics to insurance products.

## DEFINITIONS

- 6 For the purposes of this Guide, the following terms have the meanings attributed below:
- (a) Actuarially determined amounts — Amounts included in the financial statements, determined by using actuarial calculations whether or not determined by or with the assistance of an actuary.
  - (b) Actuary involved in the preparation of financial statements — An actuary, either an employee of the entity or an independent consultant, who determines and reports on amounts to be included in the financial statements prepared by management. This person is a management expert as defined in CAS 500, *Audit Evidence*.
  - (c) Auditor — An auditor who has been appointed to perform an audit and report on financial statements.
  - (d) Auditor's actuary — An appropriately qualified actuary, either an auditor's internal expert or an auditor's external expert engaged by the firm, who assists the auditor in assessing risk and performing further audit procedures to respond to assessed risk. An auditor's expert is defined in CAS 620, *Using the Work of an Auditor's Expert*.
  - (e) Management — Any person (s) having authority and responsibility for planning, directing and controlling the activities of an entity including the preparation and presentation of its financial statements.

## OBJECTIVES

- 7 This Guide is based on the conduct of an audit of financial statements in accordance with the CASs. Paragraph 11 of CAS 200, *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with Canadian Auditing Standards*, states the overall objectives of the auditor are:
- (a) to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, thereby enabling the auditor to express an opinion on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework;<sup>2</sup> and
  - (b) to report on the financial statements, and communicate as required by the CASs, in accordance with the auditor's findings.

<sup>2</sup> The term "applicable financial reporting framework" is defined in paragraph 13(a) of CAS 200.



- 8 With respect to actuarially determined amounts, the auditor's objective is to obtain sufficient appropriate evidence to provide reasonable assurance that they are reasonable within the context of the financial statements as a whole. In addition to performing appropriate procedures to test the calculation of the actuarially determined amounts, the auditor also considers such factors as the:
  - (a) complexity and subjectivity involved in preparing the actuarially determined amounts;
  - (b) availability and reliability of source data;
  - (c) degree of uncertainty of future events; and
  - (d) nature and extent of assumptions required.
- 9 Assumptions are used to determine these amounts. Different estimates may result due to the inherent uncertainties and judgments required in making such estimates. Differences between such estimates are not necessarily indicative of misstatement where the estimates are within a reasonable range. The auditor considers, based on the available evidence, a zone of reasonableness within which he or she accepts the actuarially determined amounts as being reasonable within the context of the financial statements as a whole (see paragraphs 59-71).
- 10 In meeting the objective of the audit with respect to actuarially determined amounts, the auditor considers the following:
  - (a) the need for an auditor's actuary on the engagement team (see paragraphs 14-19);
  - (b) the role of an actuary, where one is involved, in the preparation of financial statements (see paragraphs 20-24, 39, 59-71); and
  - (c) the nature and extent of corroborative evidence needed so that the auditor's work (including the work of the auditor's actuary, where used) provides the principal evidence for the auditor's opinion (see paragraphs 59-71).

## APPLICATION OF THE CANADIAN AUDITING STANDARDS (CASs)

- 11 This Guide is intended to be integrated into the overall audit process by which the auditor obtains and evaluates audit evidence to obtain reasonable assurance about whether the financial statements are presented fairly, in all material respects, in accordance with an applicable financial reporting framework. This Guide expands on matters discussed in the CASs about the audit process as it relates to actuarially determined amounts, in particular, the following:
  - (a) identifying and assessing the risks of material misstatement of the actuarially determined amounts through understanding the entity and its environment (see CAS 315, *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment*);
  - (b) the auditor's procedures in response to assessed risks of material misstatement of the actuarially determined amounts (see CAS 330, *The Auditor's Responses to Assessed Risks*);
  - (c) the auditor's consideration of the work performed by management's expert involved in the preparation of the actuarially determined amounts (for example, where an actuary is involved in the

preparation of financial statements) as audit evidence (see CAS 500, *Audit Evidence*);

- (d) the auditor's responsibilities relating to the work of an auditor's expert (for example, the auditor's actuary), when that work is used to assist the auditor in performing audit procedures on actuarially determined amounts (see CAS 620, *Using the Work of an Auditor's Expert*);
  - (e) the auditor's procedures in response to significant accounting estimates (see CAS 540, *Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures*);
  - (f) communications between actuaries involved in the preparation of financial statements and auditors (see the "Joint Policy Statement Concerning Communications between Actuaries Involved in the Preparation of Financial Statements and Auditors" appended to CAS 500); and
  - (g) the auditor's responsibility to obtain written representations from management and, where appropriate, those charged with governance (see CAS 580, *Written Representations*).
- 12 This Guide may be helpful in:
- (a) considering the audit procedures that the auditor may perform to obtain an understanding of the entity and its environment, including internal control, relevant to auditing actuarially determined amounts;
  - (b) considering the specified aspects of the entity and its environment, and components of its internal control that the auditor may need to understand, in order to identify and assess risks of material misstatement of actuarially determined amounts;
  - (c) identifying and assessing the risks of material misstatement of actuarially determined amounts, including determining whether any of the assessed risks are significant risks that require special audit consideration or risks for which substantive procedures alone do not provide sufficient appropriate audit evidence;
  - (d) determining overall responses to address risks of material misstatement at the financial statement level and the nature of those responses, including determining whether to use the work of an auditor's actuary and, if so, using such work to assist the auditor with respect to the audit of actuarially determined amounts;
  - (e) designing and performing further audit procedures with respect to actuarially determined amounts, including tests of the operating effectiveness of controls, and substantive procedures whose nature, timing and extent are responsive to the assessed risks of material misstatement at the assertion level;
  - (f) evaluating whether the risk assessment remains appropriate and concluding whether sufficient appropriate audit evidence has been obtained to provide reasonable assurance that the actuarially determined amounts are reasonable within the context of the financial statements as a whole;
  - (g) communicating deficiencies about internal control matters with respect to actuarially determined amounts with those charged with governance and management; and
  - (h) identifying those written representations that may be considered necessary to support other audit evidence relevant to the financial statements or one or more specific assertions in the financial statements.

- 13 When appropriate, this Guide lists considerations that are specific to audits of financial statements of specific types of entities (for example, insurance enterprises, employee future benefit plans, or plan sponsors). Not all considerations listed are relevant to every engagement and the list is not necessarily complete.

## DETERMINING THE NEED FOR AN AUDITOR'S ACTUARY

- 14 In planning the overall strategy of the engagement, an auditor needs to determine whether to use the work of an auditor's expert (i.e., auditor's actuary for the purposes of this Guide) if expertise in a field other than accounting or auditing is necessary to obtain sufficient appropriate audit evidence. Actuarially determined amounts include complex accounting estimates and computations requiring the specialized expertise of an actuary. The auditor, who is skilled in accounting and auditing, may not possess the necessary expertise to audit the actuarially determined amounts. The engagement partner is required to be satisfied that the engagement team, including any external parties engaged to act as auditor's experts who are not part of the engagement team, collectively have the appropriate competence and capabilities to perform the audit engagement.<sup>3</sup> Further, the auditor is required to ascertain the nature, timing and extent of resources necessary to perform the engagement.<sup>4</sup>
- 15 Considerations when deciding whether to use an auditor's actuary may include:
- (a) whether management has used an actuary in preparing the financial statements;
  - (b) the nature and significance of the matter, including its complexity; and
  - (c) the risks of material misstatement in the actuarially determined amounts to the financial statements taken as a whole.
- 16 The amounts, as described in the examples below, are significant to the overall financial statements:
- (a) Many of the financial statement items in the financial statements of an insurance enterprise (including entities with insurance business segments) or a public personal injury compensation plan are dependent on the actuarially determined amounts or affect the valuation performed by the actuary involved in the preparation of the financial statements.
  - (b) Pension and other employee future benefit plans may prepare financial statements that include or disclose the plan's actuarially determined benefit obligations, while in other circumstances and where permitted by law or regulation, they may prepare financial statements to report only the net assets available for benefits. When a pension or other employee future benefit plan prepares financial statements that include or disclose the plan's actuarially determined benefit obligations, those liabilities are normally significant to the financial statements.

<sup>3</sup> See CAS 220, "Quality Control for an Audit of Financial Statements," paragraph 14.

<sup>4</sup> See CAS 300, "Planning an Audit of Financial Statements," paragraph 7(e).

- 17 In addition to being significant to the financial statements, the actuarially determined amounts in respect of insurance and similar indemnity arrangements, defined-benefit pensions and other benefit obligations discussed in paragraph 16:
- (a) are complex accounting estimates that require computations based on actuarial mathematics that would normally require the specialized expertise of an actuary; and
  - (b) the risk of material misstatement may increase as expertise in a field other than accounting is needed for management to prepare the financial statements (for example, because of this complexity).

In an audit of these actuarially determined amounts, an auditor needs to be able to satisfy himself or herself of the:

- (a) accuracy of the actuarial calculations;
- (b) appropriateness of the judgments and the methods chosen; and
- (c) overall results of the actuarial calculations.

Based on all of these considerations, the auditor may find it necessary to use an auditor's actuary to assist in performing these audit engagements.

- 18 For audits of the financial statements of entities that are not insurance enterprises, public personal injury compensation plans or pension or future benefit plans, the auditor needs to assess whether there is a risk of material misstatement in the circumstances. Professional judgment is required in determining whether the use of an auditor's actuary is indicated and the extent of actuarial assistance required by the auditor. The considerations discussed in paragraph 15, as well as whether the auditor possesses the necessary expertise to audit these amounts, may be factored into this determination. For example, a plan sponsor's financial statements may contain actuarially determined defined benefit employee future benefit costs and obligations. These actuarially determined amounts may or may not be material or significant to the entity's financial statements taken as a whole. In some circumstances, these benefit costs and obligations can be highly significant to an entity's financial position, results of operations and cash flows. Since the auditor is reporting on the plan sponsor's financial statements, and not on the employee future benefit plan statements, the auditor is concerned with possible misstatements that may be material to the financial statements as a whole. The auditor would keep this in mind when planning the audit of the plan sponsor's financial statements, when determining the nature and extent of audit procedures to be applied and when evaluating the results of such procedures, including determining whether an auditor's actuary may be necessary and the nature and extent of actuarial assistance required by the auditor.
- 19 In some circumstances, the management of an entity might make estimates of items that would normally be determined using actuarial expertise and calculations without the use of an actuary. When management does not employ or engage experts to obtain the needed expertise to prepare the financial statements, this may significantly increase the risks of material misstatement, particularly the risk of material understatement of liabilities, making judgments as to the potential materiality of the estimate difficult. Where an appropriately qualified actuary is not used by management for an estimate ordinarily requiring the use of actuarial expertise and methods, the auditor may consider the use of an auditor's actuary to address the risk of material misstatement.

## RISK ASSESSMENT PROCEDURES AND SOURCES OF INFORMATION ABOUT THE ENTITY AND ITS ENVIRONMENT, INCLUDING INTERNAL CONTROL

### Risk assessment procedures

- 20 Paragraph 6 of CAS 315, *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment*, requires the auditor to perform the following risk assessment procedures to provide a basis for the identification and assessment of risks of material misstatement at the financial statement and assertion levels.
- (a) inquiries of management, and of others within the entity who in the auditor's judgment may have information that is likely to assist in identifying risks of material misstatement due to fraud or error;
  - (b) analytical procedures; and
  - (c) observation and inspection.
- 21 When an actuary is involved in the preparation of the financial statements, the auditor obtains an understanding of the role and responsibilities of the actuary in performing such risk assessment procedures, including the actuary's professional standing, competence, capabilities and objectivity. Much of this understanding will be obtained by communicating with the actuary involved in the preparation of financial statements throughout the audit process. As stated in paragraphs 11 and 14 of the "Joint Policy Statement Concerning Communications between Actuaries Involved in the Preparation of Financial Statements and Auditors" appended to CAS 500, certain aspects of this communication process would be in writing.
- 22 The auditor may make inquiries of an actuary involved in the preparation of financial statements, and others, to understand the entity and its environment as it relates to the actuarially determined amounts. Inquiries may be made of the audit committee, the investment committee or senior management such as the chief financial, risk, investment, information and human resources officers, as well as senior line-function actuarial staff, to:
- (a) identify actuarially determined amounts, where the greatest use of judgment is used, where new actuarial standards are being used or where there are changes in systems or practices;
  - (b) determine the extent to which a service organization is used by the entity in the operation, administration, or accounting; and
- Considerations specific to plan sponsors*
- (c) identify employee future benefit costs of a plan sponsor and determine:
    - (i) the materiality of employee future benefit costs, assets and obligations in relation to the plan sponsor's financial statements taken as a whole;
    - (ii) the number and type of employee future benefit plans and the provisions of each plan, including the nature of the benefits provided;
    - (iii) the timing of the employee future benefit plan valuations, the need for extrapolations and the involvement of management

- and an actuary in determining the employee future benefit costs, assets and obligations; and
- (iv) sociological and demographic factors regarding plan members, such as age, employment history.

- 23 Analytical procedures may be helpful in identifying the existence of unusual transactions or events, and amounts, ratios and trends that might indicate matters that have financial statement and audit implications. Such procedures may be a source of audit evidence about the reasonableness of the actuarially determined amounts. An actuary involved in the preparation of financial statements and other members of management normally will prepare analyses to evaluate the reasonableness of the actuarial valuation or elements of it.
- 24 Observation and inspection may support the responses received with respect to inquiries of management, an actuary involved in the preparation of financial statements and others, and may provide information about the entity and its environment. Such audit procedures with respect to the audit of the actuarially determined amounts may include:
- (a) reading the investment policy and funding policy of a public personal injury compensation plan, pension plan or other future benefit plan;
  - (b) reading reports of an actuary involved in the preparation of financial statements, internal audit, risk management and regulators;
  - (c) reading reports of any peer review or other external actuarial review of the work of an actuary involved in the preparation of financial statements;
  - (d) reading publicly available forecasts of economic conditions;
  - (e) reviewing information obtained from external sources such as insurance, pension or benefits industry publications and regulatory instructions that may also be useful in obtaining information relating to the actuarially determined amounts;
- Consideration specific to insurance enterprises*
- (f) inspecting documents such as business plans, strategies, management's commentaries on quarterly results and management's measurement of the amount of, and trends in, available and required capital for regulatory and other purposes (for example, regulatory capital requirement tests);
- Considerations specific to plan sponsors*
- (g) reading available assumptions of other plan sponsors or post employment plans; and
  - (h) reviewing minutes, including human resource and compensation committee minutes, and union contracts. (A review of communications with employees may be useful in obtaining information to determine the number and type of employee future benefit plans and the provisions of each plan.)

### **Discussion among the engagement team**

- 25 Paragraph 10 of CAS 315 requires the engagement partner and other key engagement team members to discuss the susceptibility of the entity's financial statements to material misstatement and the application of the applicable financial reporting framework to the entity's facts and



circumstances. The engagement partner is also required to determine which matters are to be communicated to engagement team members not involved in the discussion. As many of the financial statement items in the financial statements of an entity, within the scope of the Guide, may be dependent on the valuation of the actuarially determined amounts valued by an actuary involved in the preparation of financial statements, or affect the actuary's valuation, members of the engagement team need to understand how the results of the audit procedures they perform may affect the audit of the actuarially determined amounts.

- 26 An auditor's actuary, when involved in the engagement, may be able to assist the engagement team in:
- (a) corroborating the information obtained about the entity and its environment;
  - (b) documenting the actuarial valuation processes and related control structure;
  - (c) performing a walk-through of the procedures to confirm the actuarial valuation processes;
  - (d) understanding the susceptibility of the valuation of actuarially determined amounts to material misstatements arising from fraud or error, and in designing further audit procedures to address assessed risks of material misstatement of actuarially determined amounts;
  - (e) considering the relative conservatism of the actuarially determined amounts within a range of reasonable actuarial estimates, and how that may have changed as compared to the prior year, which may be an indicator of possible management bias;
  - (f) determining that the standards within the applicable financial reporting framework have been appropriately applied in the valuation of actuarially determined amounts;
  - (g) understanding the risk features associated with source data;  
*Consideration specific to insurance enterprises*
  - (h) understanding the risk features of existing and new insurance products;  
*Consideration specific to employee future benefit plans*
  - (i) understanding the risk features associated with source data (for example, age and gender for employee future benefit costs); and  
*Consideration specific to public personal injury compensation plans*
  - (j) understanding the risk features associated with benefits and rules.

## UNDERSTANDING THE ENTITY AND ITS ENVIRONMENT, INCLUDING INTERNAL CONTROL

### Industry, regulatory and other external factors, including the applicable financial reporting framework

- 27 Paragraph 11(a) of CAS 315, *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment*, requires the auditor to obtain an understanding of the relevant industry, regulatory and other external factors, including the applicable financial reporting framework.

## External factors

- 28 External factors are conditions, circumstances and influences that affect operations but are beyond management's control. Expectations regarding future industry conditions are significant to the assumptions underlying the determination of the actuarially determined amounts. Current industry conditions and trends are a major source of information in developing expectations about the future. Examples of matters that may be considered in developing an understanding of current industry conditions and trends include the following:
- (a) Changing sociological and demographic factors — Changes in mortality, disability and retirement ages may have a significant effect on the assumptions used to calculate the costs and obligations of plans.
  - (b) The position of the industry in the current business cycle — Over the long term, each industry goes through various business cycles. Such business cycles range from those where profitability is rising, to those where profitability is falling. Each entity responds in different ways depending on where its industry is in the current business cycle. Understanding where the industry is in the current business cycle provides useful information about the reasonableness of assumptions used in the valuation of actuarially determined amounts.
  - (c) Changes in regulation, accounting and actuarial standards — Such changes may alter requirements, assumptions or calculation methodologies.
  - (d) Changes in general economic, legal and social conditions — Such changes may mean that actual results deviate from those assumed.

### *Consideration specific to insurance enterprises*

Such changes may result in increased anti-selection by policyholders.

### *Consideration specific to employee future benefit plans*

Such changes may change the number of retirements and the age of retirement.

- (e) Changes in financial markets — Such changes may mean that actual results deviate significantly from those assumed.

### *Consideration specific to insurance enterprises*

Such changes may significantly affect the entity's continued ability to manage risks related to liquidity, rates of return on investments, foreign exchange, hedging, credit losses and asset/liability matching, minimum investment returns guaranteed on insurance products and the availability of affordable reinsurance.

### *Consideration specific to employee future benefit plans*

Changes in discount rates to reflect the time value of money and return on plan assets may have a significant effect on the entity's costs and obligations for employee future benefits.

### *Consideration specific to public personal injury compensation plans*

Changes in discount rates to reflect the time value of money and return on plan assets may have a significant effect on the determination of benefit costs and liabilities.

- (f) Changes in the social environment and consumer preferences — Such changes may have a significant effect.



*Consideration specific to insurance enterprises*

Changes in insurance policyholder needs may make older products obsolete and create increasing demand for newer products. Affecting the insurance enterprise's product mix in this way can have significant implications on the valuation of insurance contracts.

*Consideration specific to employee future benefit plans*

Changes in plan member needs may affect the level and nature of claims made by members.

**Applicable financial reporting framework**

- 29 CAS 200, *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with Canadian Auditing Standards*, discusses management's responsibilities when an audit is conducted. Among other things, management is responsible for the preparation of the financial statements in accordance with the applicable financial reporting framework, including, where relevant, their fair presentation. CAS 210, *Agreeing the Terms of Audit Engagements*, requires the auditor to establish whether the preconditions for an audit are present before accepting or continuing with an engagement. One of the preconditions is to determine whether the financial reporting framework to be applied by management in the preparation of the financial statements is acceptable. Entities preparing financial statements in accordance with Canadian generally accepted accounting principles (GAAP) will apply accounting standards in determining the actuarially determined amounts, based on the type of reporting entity (as set out in the Preface to the CICA Handbook - Accounting).

*Consideration specific to insurance enterprises*

- (a) An insurance enterprise is a publicly accountable enterprise, and applies the International Financial Reporting Standards (IFRSs), as set out in Part I of the CICA Handbook - Accounting.

*Consideration specific to employee future benefit plans*

- (b) General purpose financial statements prepared for pension plans, and benefit plans that have characteristics similar to pension plans and provide benefits other than pensions, apply the accounting standards for pension plans, as set out in Part IV of the CICA Handbook - Accounting.

*Consideration specific to plan sponsors*

- (c) Appropriate accounting standards to follow for plan sponsors of employee future benefit plans are dependent on whether the plan sponsor is:
- (i) a private enterprise that applies either accounting standards for private enterprises, as set out in Part II of the CICA Handbook - Accounting, or IFRSs in Part I;
  - (ii) a publicly accountable enterprise that applies IFRSs in Part I;
  - (iii) a not-for-profit organization that applies either accounting standards for not-for-profit organizations in Part III of the CICA Handbook - Accounting or IFRSs in Part I; or
  - (iv) a public sector entity. Entities within the scope of the CICA Public Sector Accounting Handbook refer to the Introduction to that Handbook to determine the basis of accounting for purposes of their financial reporting.

- 30 Entities may also use a financial reporting framework that is not Canadian GAAP. For example, an entity may need to report under foreign jurisdictions using generally accepted accounting principles and actuarial standards for that jurisdiction or may need to report to a regulatory body requiring compliance with that body's legislation. The auditor will need to consider whether the engagement team, and any auditor's actuary who is not part of the engagement team, includes members with sufficient relevant knowledge and experience in auditing financial statements prepared by entities using financial reporting frameworks other than Canadian GAAP in the CICA Handbook – Accounting.

### **Regulatory factors**

- 31 As most insurance enterprises and pension plans are subject to regulation, the auditor would be familiar with relevant regulatory material issued by regulators within whose jurisdiction these entities operate.

#### *Considerations specific to pension plans*

- 32 Pension legislation generally requires pension plans to file annual financial statements. The applicable financial reporting framework is defined by specified regulatory requirements. Financial statements prepared in accordance with regulatory requirements are generally considered to be special purpose rather than general purpose financial statements.
- 33 Pension legislation also generally requires actuarial valuations of pension plans for funding purposes to be filed with pension regulators every one to three years (unless the plan sponsor or regulator wishes to file more frequently). Usually, actuarial valuations for accounting purposes are prepared at the same time as those for funding purposes. Extrapolations are prepared for fiscal years between actuarial valuations unless changes (to plan provisions, membership group, etc.) between scheduled valuations are of such significance that, for accounting purposes, a new valuation is required.

### **Nature of the entity**

- 34 Paragraph 11(b) of CAS 315 requires the auditor to obtain an understanding of the nature of the entity. The auditor obtains an understanding of the entity's operations, its ownership and governance structures, the types of investments that it is making and plans to make, including investments in special-purpose entities, and the way the entity is structured and how it is financed.

#### *Considerations for insurance enterprises and public personal injury compensation plans*

- 35 The auditor obtains an understanding of those product lines that are significant in the determination of insurance contracts and reviews the features of products within those lines that are likely to be significant to the assumptions and data used in the actuarial valuation. Similarly, the auditor of a public personal injury compensation plan obtains an understanding of those indemnities that are significant in the determination of liabilities and reviews the features that are likely to be significant to the assumptions and the data used in the actuarial valuation.

*Consideration for employee future benefit plans*

- 36 Examples of matters the auditor may consider include:
- (a) the provisions of the plan, including the nature of the benefits provided; and
  - (b) administration of the plan.

*Consideration for plan sponsors*

- 37 Examples of matters that may be considered include:
- (a) the number and type of employee future benefit plans and the provisions of each plan, including the nature of the benefits provided;
  - (b) the significance of the plans in relation to the sponsor's financial statements taken as a whole; and
  - (c) the administration of each employee future benefit plan.
- 38 In obtaining an understanding of the entity's operations, the auditor determines whether the entity uses a service organization. If so, the auditor obtains an understanding of how the entity uses the services of a service organization in the entity's operations, including if the services are relevant to the entity's financial reporting. CAS 402, *Audit Considerations Relating to an Entity Using a Service Organization*, provides guidance in these matters.
- 39 As discussed in paragraph 21, the auditor obtains an understanding of the role and responsibilities of an actuary involved in the preparation of financial statements. Examples of matters that may be considered in obtaining an understanding of the role and responsibilities of an actuary involved in the preparation of financial statements and the actuarial methods used include the following:
- (a) The actuarial methods used in the calculation of the actuarially determined amounts and how an actuary involved in the preparation of financial statements ensures that these conform with current Canadian Institute of Actuaries (CIA) standards and are appropriate for the entity consistent with the applicable financial reporting framework.
  - (b) The extent to which approximations are used in calculating the actuarially determined amounts and the procedures for ensuring their reasonableness.
  - (c) How the actuary communicates with the rest of the organization, including how the actuary becomes informed about the following matters:

*Considerations specific to insurance enterprises*

- (i) underwriting decisions including new products, changes in underwriting philosophy or marketing methods that may affect actuarial assumptions;
- (ii) the frequency, severity and duration of claims, the structure and processes of the claims department, and the existence of backlogs so that these are taken into account in the valuation of insurance contracts;
- (iii) the nature and extent of the insurance enterprise's reinsurance activities, including alternative risk transfer agreements and the impact of the reinsurance program on insurance contracts;
- (iv) the asset/liability management function including asset default experience, asset/liability mismatches, reallocations of assets and related liabilities;

- (v) insurance business in other jurisdictions;
- (vi) the underwriting and claims handling practices, including those of third party administrators and of ceding companies, and the results of audits;
- (vii) how source data is determined;

*Considerations specific to employee future benefit plans*

- (viii) changes to provisions of an employee future benefit plan, including additional or terminated plans;
- (ix) how source data for employee future benefits are determined (for example, salary changes, new hires, terminations, retirements) and are determined to be relevant, complete and appropriate;

*Considerations specific to public personal injury compensation plans*

- (x) the assessment rate decisions including changes in process;
  - (xi) the frequency, severity and duration of claims, the structure and processes of the claims department, and the existence of backlogs so that these are taken into account in the valuation of liabilities;
  - (xii) the claims handling practices; and
  - (xiii) how source data is determined.
- (d) The actuarial assumptions used, including best estimates and margins and discount rates, and how the actuary involved in the preparation of financial statements compares assumptions with actual experience.

*Consideration specific to employee future benefit plans*

For pensions plans or other employee future benefit plans of a long-term nature, expected long-term future events may need to be reflected, without giving undue weight to recent experience. Periodic assessments may need to be made to ensure the assumptions continue to be relevant.

*Consideration specific to public personal injury compensation plans*

Expected long-term future events may need to be reflected, without giving undue weight to recent experience. Periodic assessments may need to be made to ensure the assumptions continue to be relevant.

*Consideration specific to insurance enterprises*

- (e) The reflection of asset/liability matching practices, where applicable, in formulating the actuarially determined amounts.

## **Objectives and strategies and related business risks**

- 40 Paragraph 11(d) of CAS 315 requires the auditor to obtain an understanding of the entity's objectives and strategies, and those related business risks that may result in risks of material misstatement. Business risk is broader than the risk of material misstatement of the financial statements, although it includes the latter. Business risk may arise when management:
- (a) fails to comply, or is at risk of failing to comply, with regulatory capital requirements, or other third party expectations of financial performance;
  - (b) changes underwriting standards;
  - (c) changes valuation and other information systems;

- (d) rapidly expands or contracts operations, or restructures or outsources operations, which may affect risk selection, estimates of claims adjustment expenses, or administration of employee future benefit plans;
- (e) introduces new employee future benefit plans, new insurance products, new warranty programs, or complex products, or enters into new reinsurance contracts where there may be a lack of significant experience or appropriate information systems from which to derive appropriate assumptions;
- (f) changes how it manages risks related to liquidity and investments, foreign exchange, hedging, credit losses and asset/liability matching;
- (g) expands or acquires foreign operations;

*Considerations specific to insurance enterprises*

- (h) changes underwriting standards;
- (i) fails to comply with appropriate market conduct practices;

*Consideration specific to employee future benefits*

- (j) fails to meet the entity's business objectives due to funding deficits; and

*Consideration specific to public personal injury compensation plans*

- (k) fails to comply with the funding policy.

- 41 In obtaining an understanding of the entity's objectives and strategies and related business risks that may result in a risk of material misstatement of the financial statements, the auditor may consider the entity's:
- (a) investment practices and strategies, including hedging;
  - (b) risk management program, the risks identified and management's responses;
  - (c) stress testing performed by the actuary involved in the preparation of financial statements;
- Considerations specific to insurance enterprises*
- (d) insurance underwriting and product profitability objectives;
  - (e) insurance distribution methods, agent and other intermediary selection, compensation and monitoring of sales practices;
  - (f) reinsurance programs, including retention limits, exposure to individual or inter-company reinsurers and in aggregate;
  - (g) strategic plan, including its attitude toward expansion into new lines of business, management of capital and regulatory compliance;
  - (h) claims handling and settlement philosophy;
- Consideration specific to plan sponsors*
- (i) new offerings of benefit plans as part of the overall compensation plan; and
- Consideration specific to public personal injury compensation plans*
- (j) claims handling philosophy.

## Measurement and review of the entity's financial performance

- 42 Paragraph 11(e) of CAS 315 requires the auditor to obtain an understanding of the measurement and review of the entity's financial performance.
- 43 In obtaining an understanding of how the entity measures and reviews its performance, the auditor may consider the following:
- (a) the key performance measures used by the entity, identifying those where actuarial calculations are of significance;
  - (b) the identification of the sources of earnings for analyzing the reasonableness of movements in the actuarially determined amounts from one period to the next;
  - (c) the use of comparisons of the entity's performance with that of its competitors or peers;  
*Considerations specific to insurance enterprises*
  - (d) the extent to which an actuary involved in the preparation of financial statements performs studies of mortality, persistence, lapses, premiums, expenses and the frequency and severity of claims, as an assessment of the reasonableness of actuarial assumptions including reinsurance (where applicable);
  - (e) the use of statistics concerning the economic value added by the entity's activities;  
*Consideration specific to employee future benefits*
  - (f) the extent to which an actuary involved in the preparation of financial statements performs studies of termination rates, disability claims rate, retirement age or changes in salary, as an assessment of the reasonableness of actuarial assumptions for employee future benefits; and  
*Consideration specific to public personal injury compensation plans*
  - (g) the extent to which an actuary involved in the preparation of financial statements performs studies of mortality, persistence, expenses and the frequency and severity of claims, as an assessment of the reasonableness of actuarial assumptions.

## Internal control

- 44 Paragraph 12 of CAS 315 requires the auditor to obtain an understanding of internal control relevant to the audit. CAS 315 indicates that internal control consists of the following components:
- (a) the control environment;
  - (b) the entity's risk assessment process;
  - (c) the information system, including the related business processes, relevant to financial reporting, and communication;
  - (d) control activities; and
  - (e) monitoring of controls.

## Controls relevant to the audit of actuarially determined amounts

- 45 Controls relevant to the audit of actuarially determined amounts may include:
- (a) policies and procedures to collect, record and process information

used for developing assumptions, and to enhance the reliability of this information, such as:

- (i) comparing actual results to past valuation assumptions;
- (ii) performing cash flow projections and sensitivity analyses to determine the effect on the valuation of various changes in critical assumptions;

*Consideration specific to insurance enterprises*

- (iii) obtaining insurance enterprise-specific and industry-wide studies to assess emerging experience for products;
- (iv) making comparisons of valuation assumptions with those used in product pricing, particularly for new products; and

*Consideration specific to employee future benefits*

- (v) obtaining industry-wide studies to assess emerging experience for products or provisions of employee future benefit plans;
- (b) policies and procedures an actuary involved in the preparation of financial statements and other members of management established and maintained to enhance the reliability of the capture and processing of source data, such as:
- (i) access controls, systems development controls and change controls over programs used in the capture and processing of data, either at the entity or at a service organization if activities are outsourced;
  - (ii) access controls over in-force databases such as investment, claims, personnel master files and valuation master files;
  - (iii) record counts and input/output reconciliations to control the transfer, processing and aggregation of source data; and

*Consideration specific to insurance enterprises*

- (iv) controls over the quality and timeliness of information provided by other insurers that cede insurance to the entity (for example, by audits to assess compliance with the administration, underwriting and claims handling policies and procedures of the insurance enterprise), and over the timely processing of such information;
- (c) policies and procedures an actuary involved in the preparation of financial statements may establish and maintain to ensure the valuation models continue to reflect the significant attributes of the business, such as:
- (i) access controls, systems development controls and change controls over the programs used in the calculation process;
  - (ii) reconciliation controls, reconciliation of system outputs to data used to derive the valuation assumptions (for example, reconciliation of total expenses and premiums to the general ledger);
  - (iii) comparison of current period results with the results projected by prior valuations (for example, comparison of current year claims to the claims projected by the previous year's model); and
  - (iv) comparison of the model and significant product features (for example, a 25-year term product would not have cash flows in year 26) or provisions of the plan (for example, post employment benefits may change upon the death of a retired employee); and
- (d) policies and procedures an actuary involved in the preparation of financial statements may establish and maintain to enhance the reliability of the actuarial calculation process, such as:



- (i) access controls, systems development controls and change controls over programs used in the calculation process;
- (ii) (access controls over master files containing calculation parameters;
- (iii) access controls, systems development controls and change controls over calculation tools, such as spreadsheets and modelling software and controls to ensure that such tools are being used for the purpose for which they are intended;
- (iv) controls over the process for estimating assumed amounts;
- (v) controls over the process for considering, justifying and selecting methods used in calculations;
- (vi) independent checks of logic used in deriving calculations;
- (vii) independent checks of calculations;
- (viii) identifying sources of earnings; and
- (ix) comparisons of current actuarial calculations with those used in prior years, with investigation of any variations that were not anticipated.

### **Control environment**

46 Paragraph 14 of CAS 315 requires the auditor to obtain an understanding of the control environment. In obtaining an understanding of the control environment of the entity with respect to the audit of actuarially determined amounts, the auditor considers paragraph A70 of CAS 315 and such things as management's:

- (a) commitment to having an actuarial valuation function that:
  - (i) is appropriately staffed, either employed or engaged by the entity, by competent people with the necessary experience and professional qualifications;
  - (ii) performs its functions with objectivity and in accordance with the CIA's professional standards; and
  - (iii) has appropriate access to the audit committee or equivalent;
- (b) commitment to oversight by conducting regular reviews of financial performance in order to identify unexpected results and take appropriate action;
- (c) communication and enforcement of integrity and ethical values that is clearly reflected in the design, administration and monitoring of financial controls, including those over the valuation of actuarially determined amounts;
- (d) recognition of the need for strong communication links between an actuary involved in the preparation of financial statements and those responsible for managing significant aspects of the entity's operations;
- (e) general philosophy on establishing actuarially determined amounts and monitoring actual-to-expected experience for the underlying assumptions;
- (f) delegation of operational authority to outside parties such as third party administrators or other service providers, and toward designing appropriate procedures to supervise, control and monitor the performance of those parties;

#### *Considerations specific to insurance enterprises*

- (g) policies relating to establishing liabilities for valid exposure and adjusting such liabilities in response to changes in risk exposure;
- (h) general philosophy on setting claim liabilities and management's historical record of claim liability adequacy or experience;



*Consideration specific to plan sponsors of employee future benefit plans*

- (i) general philosophy on providing employee future benefits; and  
*Consideration specific to public personal injury compensation plans*
- (j) general philosophy on setting claim liabilities and management's historical record of claim liability adequacy or experience.

47 When considering whether elements of the control environment have been implemented, the auditor may refer to paragraphs A71 and A77 of CAS 315.

#### **The entity's risk assessment process**

48 Paragraph 15 of CAS 315 requires the auditor to obtain an understanding of whether the entity has a process for identifying business risks relevant to financial reporting objectives, estimating the significance of the risks, assessing the likelihood of their occurrence and deciding about actions to address those risks. The auditor inquires about business risks that management and the actuary involved in the preparation of financial statements have identified at the entity level, and how they have been addressed, and considers whether they may result in material misstatement of the actuarially determined amounts.

49 The auditor may obtain information about the entity's risk assessment process from those responsible for risk management, such as the chief risk officer. The auditor may also obtain an understanding of the effect of business risks on the actuarially determined amounts by reviewing reports prepared for the audit committee or equivalent by the actuary involved in the preparation of financial statements.

#### **Information system, including the related business processes, relevant to financial reporting, and communication**

50 Paragraph 18 of CAS 315 requires the auditor to obtain an understanding of the information system, including the related business processes, relevant to financial reporting. Because of the large number of transactions, most insurance enterprises, public personal injury compensation plans and employee future benefit plans rely heavily on information technology to maintain statistical, employee and accounting records. The auditor considers the information systems relevant to the valuation of actuarially determined amounts. These systems may sometimes be outside the entity's main information systems (for example, computer-based systems and spreadsheets).

51 The auditor obtains an understanding of the following management controls:

- (a) controls over the integrity of master files;
- (b) controls over transferring information between master files, including information from external sources such as reinsurance ceding companies or third party administrators or service organizations;
- (c) controls for ensuring that valuation master files have been established and maintained to calculate the value of the actuarially determined amounts correctly; and

*Consideration specific to insurance enterprises*

- (d) controls over transferring information from the valuation master files to the general ledger.

- 52 In obtaining an understanding of the information system, the auditor considers the risks of material misstatement associated with inappropriate override of controls or bypasses to controls over the valuation of the actuarially determined amounts. In particular, the auditor may consider such things as the opportunity for management to override controls over:
- (a) actuarial assumptions;
  - (b) valuation methods;
  - (c) margins;
  - (d) adjustments to computer-produced valuations; and

*Consideration specific to insurance enterprises*

- (e) the selection of assets for matching against life insurance policy liabilities and discount rates for property and casualty policy liabilities for insurance enterprises.

**Control activities**

- 53 Paragraph 20 of CAS 315 requires the auditor to obtain an understanding of control activities relevant to the audit, being those judged necessary to understand in order to assess the risks of material misstatement at the assertion level and to design further audit procedures responsive to assessed risks. Control activities are the policies and procedures that help ensure that directives of management and the actuary involved in the preparation of financial statements are carried out. Examples of control activities relating to actuarially determined amounts may include:
- (a) proper authorization of transactions and activities — written guidelines are in place that assign appropriate individuals the responsibility for initial approval and subsequent changes of actuarial assumptions and calculation methodologies;
  - (b) independent checks on calculation of recorded amounts — actuaries are responsible for selection of actuarial methods and calculations of liability amounts, and policies and procedures are in place to evaluate those methods and calculations and the resulting liability amounts by appropriate personnel;
  - (c) design of adequate controls over documents and records —

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there are procedures to ensure that fictitious or duplicate in-force file records, such as insurance contract records for insurance enterprises are not included in the records and to prevent and detect the omission of valid transaction or records;

*Consideration specific to employee future benefits*

there are procedures to ensure that fictitious or duplicate employee records for entities offering employee future benefits, are not included in the records and to prevent and detect the omission of valid transactions or records;

*Consideration specific to public personal injury compensation plans*

there are procedures to ensure that fictitious or duplicate records are not included in the records and to prevent and detect the omission of valid transactions or records;

- (d) adequate safeguards of access to and use of assets and accounting records (i.e., data files and production programs have adequate safeguards against unauthorized access);
- (e) segregation of duties between incompatible functions; and
- (f) effective general IT controls and application controls — General IT controls are policies and procedures that relate to many applications and maintain the integrity of information and the security of the data IT systems process. Application controls are manual or automated procedures at a business process level that are designed to ensure the integrity of the accounting records.

### Monitoring of controls

- 54 Paragraph 22 of CAS 315 requires the auditor to obtain an understanding of the major activities that the entity uses to monitor internal control over financial reporting, including those related to those control activities relevant to the audit, and how the entity initiates remedial actions to deficiencies in its controls. The effectiveness of internal control over actuarially determined amounts may be monitored in the following ways:
- (a) ongoing management reviews of internal control performance;
  - (b) independent audit assessments as part of the compliance with regulatory standards for sound business and financial practices;
  - (c) evaluations by internal audit;
  - (d) reviewing reports from regulators resulting from their reviews of regulatory filings and regulatory examination reports;
  - (e) internal actuarial reviews;
  - (f) external actuarial reviews; and
- Consideration specific to insurance enterprises*
- (g) reviews by reinsurers.

## IDENTIFYING AND ASSESSING THE RISKS OF MATERIAL MISSTATEMENT

- 55 Paragraph 25 of CAS 315 requires the auditor to identify and assess the risks of material misstatement at the financial statement level, and at the assertion level for classes of transactions, account balances and disclosures to provide a basis for designing and performing further audit procedures. Paragraph 26 of CAS 315 requires the auditor to:
- (a) identify risks throughout the process of obtaining an understanding of the entity and its environment, including relevant controls that relate to risks, and by considering classes of transactions, account balances and disclosures in the financial statements;
  - (b) assess the identified risks, and evaluate whether they relate more pervasively to the financial statements as a whole and potentially affect many assertions;
  - (c) relate the identified risks to what can go wrong at the assertion level, taking into account relevant controls that the auditor intends to test; and
  - (d) consider the likelihood of misstatement, including the possibility of multiple misstatements, and whether the potential misstatement is of a magnitude that could result in a material misstatement.

- 56 Examples of risk factors relating to actuarially determined amounts include factors discussed in paragraph 28 and business risks discussed in paragraph 40.

### **Risks that require special audit consideration**

- 57 Paragraph 27 of CAS 315 requires the auditor to determine whether any of the risks identified are, in the auditor's judgment, a significant risk. In exercising this judgment, the auditor excludes the effects of identified controls related to the risk.
- 58 Actuarially determined amounts are, in many cases, complex accounting estimates and computations involving assumptions about future events and requiring the specialized expertise of an actuary. Those risks of material misstatement relating to actuarially determined amounts may be considered significant risks, particularly if the actuarially determined amount is a material component of the financial statements taken as a whole. For example, it is likely that the auditor considers insurance contracts of an insurance enterprise, the benefit liability of a public personal injury compensation plan or the pension liability in a pension plan's financial statements to be significant risks, as these are material components of their respective financial statements, whereas an actuarially determined liability for an employee future benefit plan may not be material to the financial statements of the plan sponsor. If the auditor has determined a significant risk exists to the extent not already done so, the auditor is required under paragraph 29 of CAS 315 to obtain an understanding of the entity's controls, including control activities relevant to that risk. Risk assessment procedures to obtain audit evidence about the design and implementation of relevant controls may include inquiring of entity personnel, observing the application of specific controls, inspecting documents and reports, and tracing transactions through the information system relevant to financial reporting. Inquiry alone is not sufficient for such purposes.

## **THE AUDITOR'S RESPONSES TO ASSESSED RISKS**

### **Overall responses**

- 59 Paragraph 5 of CAS 330, *The Auditor's Responses to Assessed Risks*, requires the auditor to design and implement overall responses to address the risks of material misstatement at the financial statement level. Such responses may include:
- (a) emphasizing to the audit team the need to maintain professional skepticism;
  - (b) assigning more experienced staff or those with special skills, or using experts;
  - (c) providing more supervision; or
  - (d) incorporating additional elements of unpredictability in the selection of further audit procedures to be performed.
- Additionally, the auditor may make general changes to the nature, timing or extent of audit procedures (for example, performing substantive procedures at the period end instead of at an interim date or modifying the nature of audit procedures to obtain more persuasive audit evidence).

- 60 The auditor may use an auditor's actuary on the audit. Determining the need for an auditor's actuary is discussed in paragraphs 14-19. The role of the auditor's actuary, when used by the auditor, will depend on the circumstances of the audit and may range from extensive involvement in all phases of the audit to more limited participation in specifically identified areas.
- 61 An accounting estimate is the amount included in financial statements to approximate the effect of past business transactions or events or the present status of an asset or liability. Actuarially determined amounts are considered to be an accounting estimate that may have a significant or pervasive effect on the financial statements, depending on the circumstances. Management is responsible for the accounting estimates included in financial statements, including establishing policies and procedures for the preparation of accounting estimates, which would normally include matters such as gathering the necessary data on which to base estimates, developing assumptions as to the most likely outcome, determining the amount of estimates and considering statement disclosure.
- 62 The determination of actuarially determined amounts, including the establishment of policies and procedures with respect to the preparation of the actuarially determined amounts, may be performed by the actuary involved in the preparation of the financial statements. In this regard, the actuary is functioning as management, (as management's expert), whether or not he or she is an employee or an independent consultant. If information to be used as audit evidence has been prepared using the work of a management's expert, paragraph 8 of CAS 500, *Audit Evidence*, requires the auditor, to the extent necessary, having regard to the significance of that expert's work for the auditor's purposes to: obtain an understanding of the work of the management's expert and evaluate the appropriateness of that expert's work as audit evidence for the relevant assertion. When the financial statements prepared by management include amounts determined by or with the assistance of an actuary, communications between the auditor and the actuary are guided by the "Joint Policy Statement Concerning Communications between Actuaries Involved in the Preparation of Financial Statements and Auditors" appended to CAS 500.
- 63 An understanding of the work of the management's expert includes an understanding of the relevant field of expertise. An understanding of the relevant field of expertise may be obtained in conjunction with the auditor's determination of whether the auditor has the expertise to evaluate the work of the management's expert, or whether the auditor needs an auditor's expert for this purpose. As discussed in paragraphs 14-19, if the auditor does not possess the necessary expertise to audit actuarially determined amounts prepared by an actuary and the amounts are material to the financial statements taken as a whole, the auditor would likely use an auditor's actuary to obtain sufficient appropriate evidence regarding those amounts. Accordingly, in these cases, developing overall responses to the assessed risks, the auditor may use the information produced by the entity, (i.e., by the actuary involved in the preparation of financial statements). However, the auditor is responsible for obtaining sufficient appropriate audit evidence with respect to information produced by the entity. When using information

produced by the entity, paragraph 9 of CAS 500 requires the auditor to evaluate whether the information is sufficiently reliable for the auditor's purposes, including as necessary in the circumstances:

- (a) obtaining audit evidence about the accuracy and completeness of the information; and
- (b) evaluating whether the information is sufficiently precise and detailed for the auditor's purposes.

- 64 CAS 620, *Using the Work of an Auditor's Expert*, provides guidance to the auditor when the work of an auditor's actuary is used to assist the auditor in obtaining sufficient appropriate audit evidence, including evaluating the adequacy of the auditor's actuary's work.

### **Audit procedures responsive to the assessed risks of material misstatement at the assertion level**

- 65 Paragraph 6 of CAS 330, requires the auditor to design and perform further audit procedures whose nature, timing and extent are based on and are responsive to the assessed risks of material misstatement at the assertion level (see paragraphs 55-58). In some cases, the auditor may determine that only by performing tests of controls may the auditor achieve an effective response to the assessed risk of material misstatement for a particular assertion. In other cases, the auditor may determine that performing only substantive procedures is appropriate for particular assertions and, therefore, the auditor excludes the effect of controls from the relevant risk assessment. This may be because the auditor's risk assessment procedures have not identified any effective controls relevant to the assertion, or because testing controls would be inefficient and therefore, the auditor does not intend to rely on the operating effectiveness of controls in determining the nature, timing and extent of substantive procedures, or a combined approach using both tests of controls and substantive procedures is an effective approach. However, as required by paragraph 18 of CAS 330, irrespective of the approach selected, the auditor designs and performs substantive procedures for each material class of transactions, account balance, and disclosure. This may require substantive testing of the computations, modelling, and reasonableness of assumptions used in determining the insurance contracts of an insurance enterprise or liabilities of a public personal injury compensation plan or an employee future benefit plan, as these are likely to be material account balances to the financial statements taken as a whole.

#### **Tests of controls**

- 66 Paragraph 8 of CAS 330 requires the auditor to perform tests of controls to obtain sufficient appropriate audit evidence as to the operating effectiveness of relevant controls if the auditor's assessment of risks of material misstatement at the assertion level includes an expectation that controls are operating effectively (i.e., the auditor intends to rely on the operating effectiveness of controls in determining the nature, timing and extent of substantive procedures), or substantive procedures alone cannot provide sufficient appropriate audit evidence at the assertion level. Tests of the operating effectiveness of controls, such as tests relating to the controls discussed in paragraph 45, ordinarily include the same types of audit procedures used to evaluate the design and implementation of controls; however, inquiry and observation alone are



not sufficient to test operating effectiveness of controls. Accordingly, other audit procedures are performed in combination with inquiry and observation, such as inspection or reperformance of the application of the control by the auditor. The auditor would refer to CAS 330 for further guidance and requirements on tests of controls. If the auditor plans on relying on controls over a risk considered to be a significant risk, as discussed in paragraph 58, paragraph 15 of CAS 330 requires the auditor to test those controls in the current period.

**Substantive procedures that are specifically responsive to significant risks**

- 67 Paragraph 21 of CAS 330 requires the auditor to perform substantive procedures that are specifically responsive to significant risks. When the approach to a significant risk consists only of substantive procedures, those procedures need to include tests of details. Paragraph 58 discusses risks of material misstatement of actuarially determined amounts that the auditor may judge to be significant risks. The auditor performs substantive procedures to address such risks. Examples of possible audit procedures to address the assessed risks of material misstatement are presented in Appendix A. Appendix A includes examples of responses to the auditor's assessment of the risks of material misstatement for life insurance and property and casualty insurance enterprises, including reinsurance enterprises, public personal injury compensation plans, defined benefit employee future benefit obligations of plan sponsors or defined future employee benefit plans.
- 68 The following are areas where the auditor's actuary may assist in performing substantive procedures on those actuarially determined amounts where the auditor judges the risks of material misstatement to be significant risks:
- (a) Assessment of the reasonableness of the source data in the actuarial analysis, identification of important source data for testing, evaluation as to whether the source data used is appropriate (relevant, complete and accurate) and inquiry of the actuary involved in the preparation of financial statements as necessary.
  - (b) Reading of reports from the actuary involved in the preparation of financial statements and dialogue with that actuary regarding consistency of the report with that actuary's understanding of the underlying data, methods and assumptions used in developing the actuarially determined amounts as well as industry experience.
  - (c) Review of financial statement footnotes pertaining to actuarially determined amounts for completeness and accuracy.
  - (d) Review of the actuarial analysis for reasonableness, including:
    - (i) appropriateness of the level of detail used;
    - (ii) appropriateness of methods used (consistency with authoritative practice and industry practice);
    - (iii) appropriateness of assumptions in light of experience and other information;
    - (iv) judgments made;
    - (v) selections made;
    - (vi) completeness of valuation, including the reflection of all relevant events and changes to the employee future benefit plans or insurance contracts;
    - (vii) completeness of documentation included in actuarial analysis;

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- (viii) review of reinsurance transactions to assess risk transfer and appropriateness of accounting treatment; and

*Consideration specific to employee future benefit plans*

- (ix) review of the timing of employee future benefit plan valuations and the appropriateness and sufficiency of extrapolations performed in between formal valuations.

*Considerations specific to insurance enterprises*

- (e) Testing of the insurance contracts to determine if they are being calculated consistent with the indicated methodology and assumptions. The testing would confirm that the documented methodology is being accurately applied in the valuation model and that the assumptions are used appropriately. For a life insurance enterprise, the auditor's actuary may target test-specific insurance contracts and other actuarial balances, typically at the policy or cohort level, depending on the nature of the calculation. For a property and casualty insurance enterprise, the auditor's actuary may test loss and expense insurance contracts for more significant lines of business and evaluate for reasonableness the loss development patterns and loss ratio assumptions, and the impact of significant business changes, claims handling expenses and other key assumptions.

*Consideration specific to public personal injury compensation plans*

- (f) Testing of liabilities to determine if they are being calculated consistent with the indicated methodology and assumptions. The testing would confirm that the documented methodology is being accurately applied in the valuation model and that the assumptions are used appropriately.
- (g) Discussion of the asset/liability management strategy and implications on the actuarially determined amounts with the actuary involved in the preparation of financial statements.

*Consideration specific to employee future benefits*

- (h) Testing of member liabilities and service costs to determine if they are being calculated consistent with the indicated methodology and assumptions, and the plan provisions, as described. The testing would confirm that the documented methodology is being accurately applied in the valuation model and that the assumptions are used appropriately. For an employee future benefits plan, the auditor's actuary may review aggregate liabilities and service costs at the plan level, for a segment of the membership population, or target-test individual plan members' liabilities and service costs.

The extent of assistance would be impacted by such factors as the complexity of the actuarially determined amounts, the auditor's cumulative knowledge of the integrity of the actuarially determined amounts reserving process, the effectiveness of the internal control structure, the degree and nature of changes in the actuarially determined amounts in the current year, and other changes in areas impacting on the actuarially determined amounts.



## Evaluating the sufficiency and appropriateness of audit evidence

- 69 Paragraph 25 of CAS 330 requires the auditor to evaluate whether the assessments of the risks of material misstatement at the assertion level remain appropriate. This evaluation is primarily a qualitative matter based on the auditor's judgment. Such an evaluation may provide further insight about the risks of material misstatement of actuarially determined amounts and whether there is a need to perform additional or different audit procedures. The auditor would conclude whether sufficient appropriate audit evidence has been obtained. In developing an opinion, the auditor considers all relevant audit evidence, regardless of whether it appears to corroborate or to contradict the assertions in the financial statements. If the auditor is unable to obtain sufficient appropriate audit evidence as to a material financial statement assertion, the auditor is required to express a qualified opinion or disclaim an opinion on the financial statements.
- 70 If, based on the audit evidence obtained, the auditor concludes that the financial statements are materially misstated, he or she would request that management address the material misstatement. If management does not appropriately address the misstatement, the auditor modifies the opinion in the auditor's report. If the auditor concludes that there is a material misstatement in the financial statements with respect to actuarially determined amounts due to fraud, he or she refers to CAS 240, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*, for guidance.
- 71 CAS 705, *Modifications to the Opinion in the Independent Auditor's Report*, provides guidance to the auditor regarding the types of modified opinions to be issued in cases where:
- (a) the auditor concludes, based on the audit evidence obtained, that the financial statements as a whole are not free from material misstatement; or
  - (b) the auditor is unable to obtain sufficient appropriate audit evidence to conclude that the financial statements as a whole are free from material misstatement.

## COMMUNICATING DEFICIENCIES IN INTERNAL CONTROL TO THOSE CHARGED WITH GOVERNANCE AND MANAGEMENT

- 72 CAS 265, *Communicating Deficiencies in Internal Control to Those Charged with Governance and Management*, requires the auditor to communicate in writing significant deficiencies in internal control identified during the audit to those charged with governance and management at an appropriate level of responsibility. Other deficiencies in internal control identified during the audit that have not been communicated to management by other parties and that, in the auditor's professional judgment, are of sufficient importance to merit management's attention should also be communicated to management on a timely basis.

## WRITTEN REPRESENTATIONS

- 73 Paragraph 10 of CAS 580, *Written Representations*, requires the auditor to request management to provide a written representation that it has fulfilled its responsibility for the preparation of the financial statements in accordance with the applicable financial reporting framework. Paragraph 13 of CAS 580 requires the auditor to request one or more written representations that the auditor determines necessary to support other audit evidence relevant to the financial statements or one or more specific assertions in the financial statements. Such written representations may supplement, but do not form part of, the written representation required by paragraph 10 of CAS 580. In the case of actuarially determined amounts, they may include representations about the following:
- (a) whether the selection and application of accounting policies are appropriate;
  - (b) whether matters, such as the following, under the applicable financial reporting framework, have been recognized, measured, presented or disclosed in accordance with that framework:
    - (i) actuarially determined amounts for employee future benefits, including:
      - the use of specific actuarial assumptions that are management's best estimate assumptions;
      - the determination of the discount rate;
      - the completeness and accuracy of plans included in the valuation, the source data and plan provisions; and
      - the accuracy of extrapolations, including proper reflection of the effects of changes and events occurring subsequent to the most recent valuation that had a material effect on the extrapolations.
    - (ii) actuarially determined amounts for insurance contracts; and
    - (iii) aspects of laws and regulations that may affect the financial statements, including non-compliance.

**APPENDIX A**

**EXAMPLES OF POSSIBLE AUDIT PROCEDURES TO ADDRESS THE ASSESSED RISKS OF MATERIAL MISSTATEMENT**

The examples provided cover possible audit procedures to address the assessed risks of material misstatement of actuarially determined amounts applicable to many engagements; however, not all matters are relevant to every engagement and the list of examples is not necessarily complete.

This Appendix provides examples regarding the following actuarially determined amounts:

- (a) Insurance contracts of insurance enterprises, including reinsurance activities, and liabilities of public personal injury compensation plans; and
- (b) Defined benefit employee future benefit obligations of plan sponsors or defined future employee benefit plans.

**Examples of possible audit procedures to address the assessed risks of material misstatement of insurance contracts and liabilities of public personal injury compensation plans**

Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<p><b>Existence</b></p> <p>All insurance contracts recorded on the balance sheet are actual liabilities of the insurance enterprise and relate to obligations incurred under contracts in force.</p>	<p>Reconcile the in-force file to the valuation file to ascertain that all contracts included in the valuation were in force and that the policy attributes are accurate.</p> <p>Obtain an understanding of insurance contracts (i.e., through discussion with management and review of supporting documents).</p> <p>For a sample of policies, confirm the existence of the policy and key terms of the contract with the policyholder.</p>	<p>Reconcile the unpaid claims detailed records to the valuation file to ascertain that the valuation properly included all unpaid claims and that the policy attributes are accurate.</p> <p>Obtain an understanding of insurance contracts (i.e., through discussion with management and review of supporting documents).</p>	<p>Reconcile the valuation file to benefits currently in course of payment for different classes of benefit.</p> <p>Obtain an understanding of the coverages under the different classes of benefits provided.</p>
<p><b>Completeness</b></p> <p>All insurance contracts for contracts in force at the balance sheet date are included in the balance sheet.</p>	<p>Reconcile the in-force file to the valuation file to ascertain that all contracts in force were properly included in the valuation and that the policy attributes are accurate.</p> <p>Review valuation records for unusual items and ascertain their appropriateness.</p> <p>For in-force models, review client-prepared test results and evaluate the adequacy of testing.</p> <p>Review model test results under varying conditions to determine whether they are properly responsive to changes in experience.</p>	<p>Reconcile the unpaid claims detailed records to the valuation file to ascertain that all unpaid claims were properly included in the valuation and that the policy attributes are accurate.</p> <p>Select claims files and test to ensure they are properly accounted for on outstanding claims listing.</p> <p>Reconcile unpaid claims listing to the general ledger and statistical records.</p> <p>Test accumulation of data and balances by line of business and by accident or exposure period.</p>	<p>Reconcile the valuation file to benefits currently in course of payment for different classes of benefit.</p>

Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<p><b>Valuation and allocation</b></p> <p>Insurance contracts on the balance sheet are adequate and reasonable estimates of contract obligations incurred, and are correctly computed using methodologies and assumptions that are appropriate.</p>	<p>Analyze and obtain explanations for changes between periods for the following:</p> <ul style="list-style-type: none"> <li>(a) assumptions and methodologies; insurance contracts by line of business;</li> <li>(b) mortality, investment or persistence gains / losses; claim liabilities by kind of coverage;</li> <li>(c) ratios of claim liabilities and unearned premiums to premiums; and</li> <li>(d) loss ratios by line of business for short-duration contracts.</li> </ul> <p>Evaluate the valuation methodology and determine whether it is appropriate for the underlying contracts.</p> <p>Evaluate whether assumptions and valuation practices are reasonable in relation to the underlying contracts in force and the operating characteristics of the insurance enterprise and are consistently applied. For changes in assumptions and valuation practices, evaluate the appropriateness of the changes in light of the insurance enterprise's experience studies, kind of contracts and other relevant factors.</p> <p>Review results of mortality, morbidity, withdrawal and expense studies relating to liability assumptions and compare to current assumptions used.</p> <p>Review correlation of investment policy and related interest liability assumptions to the kind of products being sold, the design of the products being sold and how and to whom the products are being marketed.</p> <p>Test a sample of policies to ensure that the insurance contracts are calculated appropriately.</p>	<p>Test posting of losses, loss-adjustment expenses and reinsurance recoverable for claims selected from claims register; reconcile to subsidiary registers and statistical records.</p> <p>Reconcile the total amount of paid losses to cash disbursement records.</p> <p>Test loss liability development by line of business.</p> <p>Perform analytical procedures on losses incurred, losses paid, loss liabilities and loss ratios by line of business.</p> <p>Review current reports of regulatory examiners and loss developments prepared for regulatory filings and investigate significant items.</p> <p>Reconcile source data used in the valuation of insurance contracts with the insurance enterprise's claims database and ensure that it is complete and accurate.</p> <p>Obtain information about the insurance enterprise's method for determining the liability for incurred but not reported (IBNR) losses and evaluate its reasonableness.</p> <p>Determine if there have been any significant changes in the insurance enterprise's methods and procedures, and evaluate the effect of all current trends and conditions.</p> <p>Test the appropriateness of industry or other external data sources used in developing assumptions.</p> <p>Identify the sources of data or other information used in forming the assumptions and consider whether such information is relevant, reliable and sufficient for the purpose.</p>	<p>Analyze and obtain explanations for changes between periods for the following:</p> <ul style="list-style-type: none"> <li>(a) assumptions and methodologies; benefit liabilities by type of coverage; and</li> <li>(b) relationship of loss experience to experience rating charges and refunds to employers.</li> </ul> <p>Evaluate the valuation methodology and determine whether it is appropriate for the underlying benefits.</p> <p>Evaluate whether assumptions and valuation practices are reasonable in relation to the underlying benefits provided and are consistently applied. For changes in assumptions and valuation practices, evaluate the appropriateness of the changes in light of the public personal injury compensation plan's experience studies, changes in coverages and other relevant factors.</p> <p>Review results of benefit cost experience and future claims administration expense studies relating to liability assumptions and compare to current assumptions used.</p> <p>Assess whether the assumptions used reflect any significant changes in conditions since the time detailed supporting studies were performed.</p>

Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<p><b>Valuation and allocation (cont'd)</b></p>	<p>Consider whether benefit and premium patterns coincide with actual contract specifications.</p> <p>Perform tests of clerical accuracy and completeness of policy liability summaries.</p> <p>Perform tests relating to asset / liability matching as follows:</p> <ul style="list-style-type: none"> <li>(a) consistent matching of assets with related liabilities;</li> <li>(b) asset cash flow calculations use correct factors such as par value, cost, coupon rate, maturity date; and</li> <li>(c) reinvestment strategy employed in the valuation is appropriate and modelled appropriately.</li> </ul> <p>Test in-force contracts as follows:</p> <ul style="list-style-type: none"> <li>(a) determine whether all in-force contracts are included in the proper valuation cells (for example, plan, issue date, issue age, interest rate) for the appropriate amount of insurance; and</li> <li>(b) ensure that unusual or unexpected additions or deletions are identified, and compare valuation cells at the beginning and end of the reporting period.</li> </ul> <p>Reconcile the financial statement items for insurance contracts with the report from the actuary involved in the preparation of financial statements, and consider and conclude on the reasonableness of reconciling items.</p>	<p>Consider whether there is additional information or alternative assumptions about the factors.</p> <p>Evaluate whether the assumptions are consistent with each other, the supporting data, relevant historical data and industry data, where appropriate.</p> <p>Analyze historical data used in developing assumptions to assess whether it is comparable and consistent with data of the period under audit, and consider whether the data is sufficiently reliable for the purpose.</p> <p>Consider whether changes in the industry, business, plans, goals or objectives of the insurance enterprise have been reflected in the assumptions.</p> <p>Test the calculations used to translate the assumptions and methods into the accounting estimate.</p> <p>Compare current IBNR liability against claims reported in the subsequent period, and investigate significant fluctuations.</p> <p>Compare enterprise's IBNR loss liability development for prior periods with actual results, and investigate causes of significant discrepancies.</p> <p>Reconcile the financial statement items for insurance contracts with the reports from the actuary involved in the preparation of financial statements and consider and conclude on the reasonableness of reconciling items.</p>	

Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<b>Cut-off</b>	<p>Obtain an understanding of the cut-off date. Test assumptions and calculations surrounding cut-off of policy information. Assess if the actuary is reflecting this information in the valuation.</p> <p>Consider whether unusual processing backlogs existed at period end and determine the appropriateness of adjustments.</p> <p>Review policy contracts entered into after the balance sheet date but before the report release date to ascertain proper cut-off.</p>	<p>Obtain an understanding of the cut-off date. Test assumptions and calculations surrounding cut-off of claims. Assess if the actuary is reflecting this information in the valuation.</p> <p>Review and test the provision for written but not reported (WBNR) premiums.</p> <p>Test whether claims processing cutoff at the balance sheet date was proper and consistent with prior year.</p> <p>Consider whether unusual processing backlogs existed at period end and determine the appropriateness of adjustments.</p>	<p>Obtain an understanding of the cut-off date. Test assumptions and calculations surrounding cut-off of benefits information. Assess if the actuary is reflecting this information in the valuation.</p> <p>Consider whether unusual processing backlogs existed at period end and determine the appropriateness of adjustments.</p>

**Examples of possible audit procedures to address the assessed risks of material misstatement of insurance contracts arising from reinsurance activities**

Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<b>Existence</b>	<p>Obtain reinsurance contract and perform procedures to assess whether it is in force and binding (for example, appropriately signed or other appropriate evidence).</p> <p>Confirm key treaty terms with counterparty.</p> <p>Obtain an understanding of reinsurance contract (i.e., through discussion with management and review of supporting documents).</p> <p>Trace attributes of assumed policies relevant to the valuation of insurance contracts (for example, age, sex, policy type, premium, face amount) from the policy administration system to appropriate source documents (for example, data and statements provided by cedant or brokers, payment information).</p>	<p>Obtain reinsurance contract and perform procedures to assess that it is in force and binding (for example, appropriately signed or other appropriate evidence).</p> <p>Confirm key treaty terms with counterparty.</p> <p>Obtain an understanding of reinsurance contract (i.e., through discussion with management and review of supporting documents).</p> <p>Trace assumed ceded unpaid claims and adjustment expenses balances and unearned premium (at balance sheet date) and paid claims and earned premiums (for the period) from appropriate source documents to the policy administration system to appropriate source documents (for example, data and statements provided by cedant or brokers, payment information).</p> <p>Trace attributes of assumed paid and unpaid claims relevant to the valuation of insurance contracts (for example, line of business, date of loss) from the policy administration system to appropriate source documents.</p>	<p>Not normally applicable for public personal injury compensation plans. If reinsurance is used, however, similar considerations would apply as for insurance enterprises.</p>



Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<b>Completeness</b>	<p>Trace attributes of assumed policies (for example, age, sex, policy type, premium, face amount) from appropriate source documents (for example, data and statements provided by cedant or brokers and payment information) to the policy administration system.</p> <p>Reconcile reinsurance records from policy administration system to valuation data file.</p> <p>Review reinsurance agreements entered into after the balance sheet date but before the report release date to ascertain proper cut-off.</p>	<p>Trace assumed ceded unpaid claims and adjustment expenses balances and unearned premium (at balance sheet date) and paid claims and earned premiums (for the period) from appropriate source documents to the policy administration system.</p> <p>Test continuity of actuarial database.</p> <p>Agree assumed and ceded earned and unearned premium balances to the valuation data file. Testing would ensure that data is properly classified (for example, line of business, accident year).</p> <p>Review reinsurance agreements entered into after the balance sheet date but before the report release date to ascertain proper cut-off.</p> <p>Review assumed claims incurred after the balance sheet date, but before the report release date, that relate to premiums earned up to the balance sheet date, and compare with the IBNR amounts calculated by the actuary.</p>	
<b>Valuation and allocation</b>	<p>Valuation is same for direct and reinsurance balances except that with reinsurance, there may be data limitations.</p> <p>Review models that estimate business volumes where direct enterprise data is not available. Test consistency with premium received, pricing and valuation assumptions as well as consistency with models used in the prior period.</p> <p>Obtain an understanding of the actuarial model used for reinsurance to test that it reflects underlying reinsurance terms (i.e., through discussion with the actuary and review of the model).</p>	<p>Obtain an understanding of the actuarial model used for reinsurance to test that it reflects underlying reinsurance terms (i.e., through discussion with the actuary and review of the model).</p>	



Assertion	Procedures — life insurance enterprise	Procedures — property and casualty insurance enterprise	Procedures — public personal injury compensation plan
<b>Accuracy</b>	Recalculate unpaid claims and adjustment expenses and paid claims recorded on the policy administration system by reference to the reinsurance contract. Compare calculations to amounts recorded on system.	Recalculate unpaid claims and adjustment expenses and paid claims recorded on the policy administration system by reference to the reinsurance contract. Compare calculations to amounts recorded on system.	
<b>Rights and obligations</b>	Evaluate management's procedures to validate the cedant's controls, accounting records, and compliance with underwriting standards.	Evaluate management's procedures to validate the cedant's controls, accounting records, and compliance with underwriting standards.	
<b>Cut-off</b>	Obtain an understanding of the cut-off date. Test assumptions and calculations surrounding cut-off of policy information. Assess whether the actuary is reflecting this information in the actuarial valuation. Consider whether unusual processing backlogs existed at period end and determine the appropriateness of adjustments.	Obtain an understanding of the cut-off date. Test assumptions and calculations surrounding cut-off of claims. Assess whether the actuary is reflecting this information in the actuarial valuation. Consider whether unusual processing backlogs existed at period end and determine the appropriateness of adjustments.	

**Examples of possible audit procedures to address the assessed risks of material misstatement of defined benefit employee future benefit obligations of plan sponsors or defined future employee benefit plans.**

<b>Area</b>	<b>Assertion(s)</b>	<b>Procedures</b>
Test the benefit obligation balance.	Existence, Rights and Obligations, Valuation and Allocation	<p>To test the benefit obligation, consider the following:</p> <ul style="list-style-type: none"> <li>• Determine that the policies and procedures for calculating and recording the benefit obligation are appropriate and applied consistently.</li> <li>• Examine the information regarding the actuarial present value of the benefit liabilities and changes therein.</li> <li>• Evaluate the work of the actuary or management, where management makes its own estimate.</li> <li>• Consider involving an auditor's actuary to assist with testing the reasonableness of actuarially determined amounts.</li> <li>• Agree the benefit obligations amount in the confirmation received from the actuary involved in the preparation of financial statements, where used, to the amount recorded in the entity's records.</li> <li>• Test the plan provisions valued by the actuary, or management, against the substantive commitments made by the plan sponsor (for example, by examining the plan documents and member communications).</li> </ul>
Test the underlying data and assumptions	Completeness, Valuation and Allocation	<p>To determine that the information is accurate and complete, consider the following:</p> <ul style="list-style-type: none"> <li>• Evaluate the reasonableness of the procedures employed to ensure that all covered participants, beneficiaries, and dependents have been properly included in eligibility records and that information provided to the actuary covers all and only such individuals.</li> <li>• Evaluate the reasonableness of the procedures employed by the entity to ensure that pertinent and accurate participant data (for example, age, sex, years of service, compensation) have been properly included. Pertinent data is dependent on the nature of the calculation that determines the future employee benefit.</li> <li>• Consider the frequency and scope of changes in participant information.</li> <li>• Determine that the policies for providing such information are appropriate and applied consistently.</li> <li>• Perform procedures to evaluate the reasonableness of assumptions used in the valuation.</li> </ul>
Test the participant data used to measure the benefit obligation.	Completeness, Valuation and Allocation	<p>To test the participant data used to measure the benefit obligation, consider the following:</p> <ul style="list-style-type: none"> <li>• Test participant data by performing tests of details or a combination of test of details and substantive analytical procedures. Make a selection of items from the entity's initial payroll disbursements records for the year from listings of terminated participants who have attained full eligibility for benefits and from benefit payment records as of the valuation date using an attribute sampling methodology.</li> <li>• Examine personnel records to determine whether the selected individuals are eligible to participate in the plan.</li> <li>• Compare data for selected participants to determine that the eligible individuals, including dependents and spouses, where appropriate, have been properly included.</li> <li>• Evaluate the reasonableness of the procedures to accurately account for claims and reconcile the claims-paid data provided to the actuary to the amount recorded in the entity's accounting records.</li> </ul>

Area	Assertion(s)	Procedures
<p>Test benefit cost by performing tests of details</p>	<p>Existence</p>	<p>To test the current period benefit cost, consider the following procedures:</p> <ul style="list-style-type: none"> <li>• Determine that the policies and procedures for calculating and recording current period benefit cost are appropriate and applied consistently.</li> <li>• Obtain a schedule showing the components (i.e., service cost, interest cost, etc.) of the current-period amount of the benefit cost.</li> <li>• Agree the components of the benefit cost provided in the schedule to the confirmation received from the actuary, if applicable, and to the amount recorded in the entity's accounting records.</li> <li>• Review the calculations of the components of the benefit cost for unusual items.</li> <li>• Consider involving an auditor's actuary to assist with testing the reasonableness of actuarially determined amounts.</li> </ul>
<p>Test benefit cost by performing substantive analytical procedures</p>	<p>Existence, Rights and Obligations, Completeness, Valuation and Allocation</p>	<p>To test benefit cost by performing substantive analytical procedures, consider the following procedures:</p> <ul style="list-style-type: none"> <li>• Determine the suitability of particular substantive analytical procedures for given assertions, taking account of the assessed risks of material misstatement and tests of details, if any, for these assertions.</li> <li>• Evaluate the reliability of data from which the expectation of recorded amounts or ratios is developed, taking account of source, comparability, nature and relevance of information available, and controls over preparation.</li> <li>• Develop an expectation of recorded amounts or ratios and evaluate whether the expectation is sufficiently precise to identify a misstatement that, individually or when aggregated with other misstatements, may cause the financial statements to be materially misstated.</li> <li>• Determine the amount of any difference of recorded amounts from expected values that is acceptable without further investigation.</li> <li>• If fluctuations or relationships are identified that are inconsistent with other relevant information or that differ from expected values by a significant amount, investigate such differences by:             <ul style="list-style-type: none"> <li>o Inquiring of management and obtaining appropriate audit evidence relevant to management's responses; and</li> <li>o Performing other audit procedures as necessary in the circumstances.</li> </ul> </li> </ul>

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