PROPERTY AND CASUALTY INSURANCE COMPENSATION CORPORATION (PACICC)

The P&C Actuary's Role in Solvency Monitoring

As Set Out in Legislation, Regulatory Requirements, And Professional Standards of Practice

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PART 1 – PURPOSE AND SCOPE

Purpose

The Property and Casualty Insurance Compensation Corporation (PACICC) is interested in determining if there is a relationship between the financial solidity of property and casualty (P&C) insurers who use the services of actuaries and those that do not. The role of the actuary with Canadian P&C insurance companies is greatly influenced by the requirements set out in legislative acts and regulations as well as by the professional requirements established by the Canadian Institute of Actuaries (CIA or Institute).

PACICC requested KPMG LLP (KPMG) to prepare a research report addressing the following:

— Summary of current Canadian regulatory requirements[1] of the actuary directed at solvency

— History of changes over the past 20 to 25 years in actuarial requirements as mandated by the CIA

— Effect of changes in actuarial requirements, either emanating from regulatory requirements or the CIA, on the solvency of Canadian insurers

Organization of Report

We organize this report in the following eight parts:

1. Purpose and scope
2. Research methodology process
3. Financial metrics – federal and provincial P&C insurance companies
4. Introduction to the regulation of insurance companies in Canada
5. Current Canadian regulatory requirements of the actuary – federal regulation
6. Current Canadian regulatory requirements of the actuary – provincial regulation
7. The Canadian Institute of Actuaries
8. History of P&C insurer insolvency in Canada

Limitation of Scope

It is important to recognize that PACICC's request of KPMG has a very narrow focus. Our objective is to review the role of the P&C actuary as defined by regulatory and professional requirements and to seek potential links between the effect of changes in actuarial requirements and the solvency of Canadian P&C insurers.

[1] Throughout this report, the terms "regulatory requirements" and "regulation" are typically used in a broad sense to refer to both legislative acts as well as requirements set out by superintendents of insurance in directives, guidelines, bulletins, memorandum, and other forms of guidance.

PART 2 – RESEARCH METHODOLOGY PROCESS

To complete this research assignment, we conducted a literature review and personal interviews. Through the internet as well as through discussions with experienced actuarial practitioners in the industry, we identified relevant reports, articles, regulations, and guidelines. We include a complete list of all reference resources in Appendix A of this paper.

We reached out by telephone and email to provincial regulators. Specifically, we contacted the regulators in the following provinces:

- Alberta
- Manitoba
- New Brunswick
- Nova Scotia
- Newfoundland
- Ontario
- Prince Edward Island

When speaking with regulators in each of the above provinces, we requested information on P&C insurers incorporated in the province (i.e., provincially regulated insurers). For each province, we asked the following four questions:

1. Is a report on dynamic capital adequacy testing (DCAT) required on an annual basis?

2. Is there a requirement for the submission of an actuarial report and opinion statement as to the adequacy of policy liabilities with the annual return?

3. Is there a requirement to follow the minimum capital test (MCT) guidelines set out by the Office of the Superintendent of Financial Institutions (OSFI) or similar guidelines?

4. Is actuarial external review (i.e., peer review) required for actuarial reports?

We did not reach out to British Columbia or Quebec as the necessary information was readily available on their web sites. We also did not reach out to regulators in the territories as it is our understanding that there are no insurers incorporated in the territories.

To understand the evolution of professional requirements at the CIA, we met with William Wieland and David Oakden. Both Mr. Wieland and Mr. Oakden are long-time volunteers who have held numerous senior leadership roles within the CIA. We also conducted an extensive review of the archived standards of practice of the CIA as well as the activity of the past decade.

PART 3 – FINANCIAL METRICS – FEDERAL AND PROVINCIAL P&C INSURANCE COMPANIES

The purpose of this part of the report is to provide a sense of the relative magnitude of P&C companies that are federally regulated versus companies that are provincially regulated. In Table 1, we present key financial metrics based on MSA Research Inc.[2] year-end 2009 data for P&C companies in three categories:

— Federally regulated companies
— Provincially regulated other than provincial automobile insurance companies
— Insurance Corporation of British Columbia and Saskatchewan Auto Fund[3]

As evident from the table below, more than 75% of the total premium volume in Canada is written by companies that are subject to federal regulation, roughly 10% is written by two of the largest provincial automobile insurance companies, and about 12% by other provincially regulated companies.

Table 1 – Financial Metrics

($000)	Federally Regulated	Provincially Regulated	Provincial Auto Insurers
Net Written Premium	32,433,138	5,046,228	4,318,564
Gross Unpaid Claims	57,371,376	4,440,097	6,888,401
Total Assets	120,114,940	12,273,232	14,140,407
Surplus	34,650,252	3,788,085	3,818,934

During 2009, there were 149 provincially regulated P&C insurers (including provincial automobile insurers) in Canada. Table 2 illustrates the distribution of these insurers by province.[4]

Table 2 – P&C Insurers by Province

	BC	AB	SK	MB	ON	PQ	NB	NS	PE	NF	Ter
Insurers	8	8	12	2	56	51	5	0	2	2	0
Public Auto Insurers	1	0	1	1	0	0	0	0	0	0	0
Total	9	8	13	3	56	51	5	0	2	2	0

[2] MSA Research Inc. is a Canadian-owned, independent analytical research firm that is focused on the Canadian insurance industry.
[3] Data for Manitoba Public Insurance (MPI) and Societe d'assurance automobile du Quebec were not included in the database of MSA Research Inc. Financial information for MPI is publicly available on its web site.
[4] Data provided by Darrell Leadbetter of PACICC. Note, these numbers vary somewhat from those provided by the provincial regulators.

PART 4 – INTRODUCTION TO THE REGULATION OF INSURANCE COMPANIES IN CANADA

Sharing of Responsibilities at the Federal and Provincial Levels

In Canada, the federal and provincial governments share the responsibility for the supervision of insurance companies. Federal insurance regulation controls certain activities of all federally incorporated companies and all non-resident companies. "The objective of the federal legislation is to try to ensure to the extent possible that federally supervised companies remain able to meet their obligations to their policyholders."[5] For federally regulated insurance companies, OSFI is responsible for financial solvency supervision.

Provinces have responsibilities similar to those of OSFI, typically in the form of Superintendents of Insurance, for insurers incorporated in their jurisdictions. In addition to regulatory requirements directed at solvency, provincial regulation is aimed at matters such as:

— Licensing of insurance companies
— Terms and conditions of insurance contracts and their interpretations
— Licensing of agents, brokers, and claims adjusters
— Sales practices and information disclosure
— Claim settlement practices
— Compulsory insurance coverage and residual markets
— Filing and approval of premium rates

Provincial regulation on these topics applies equally to provincially regulated and federally regulated companies.

Insurers are required to satisfy the solvency requirements of the jurisdiction of their incorporation as well as each province in which they are licensed. At a federal level, the relevant legislation includes:

— *Office of the Superintendent of Financial Institutions Act*[6]
— *Insurance Companies Act of Canada* (*ICA*)

J. Brian Reeve, Esq. comments on the Canadian model of insurance regulation in his paper "Canadian Insurance Regulation: The Change to a Risk Based Approach." He states:

> Canada provides a good model for effective insurance regulation. Our dual system of regulation has slowly evolved from being inefficient with significant overlaps to being reasonably well harmonized. The Canadian Council of Insurance Regulators had done an effective job of standardizing many areas of insurance regulation. OSFI has emerged as the dominant insurance solvency regulator in Canada and has significant resources and experience that most provincial departments of insurance are unable to match. As a result, there has

[5] Robert M. Hammond, federal Superintendent of Insurance (1983), luncheon address at the November 1983 CAS annual meeting titled "Insurance Regulation in Canada and the Role of the Casualty Actuary," PCAS, LXX, pages 289-296, (Hammond 1983).
[6] The federal act that established the powers of the Office of the Superintendent of Financial Institutions (OSFI) in 1987.

been a continuing trend to delegate and transfer authority in many areas of insurance regulation to OSFI. The role of provincial departments of insurance is appropriately focused on distribution issues such as market conduct and consumer protection.[7]

Collaborative Approach to Regulation

The approach to insurance regulation in Canada is a collaborative process between the federal and provincial superintendents of financial institutions, representatives from the CIA and the Canadian Institute of Chartered Accountants (CICA), as well as representatives from the insurance industry (such as the Insurance Bureau of Canada). There are working groups, committees, and task forces that operate with representatives from all organizations. Some of these groups are set up for a defined period of time to address a specific issue. Other groups meet on a regular basis to discuss key issues and potential changes in regulatory, accounting, actuarial and other practices.

Change by one organization is often complemented by actions in other organizations. For example, a change in regulatory requirements may be followed by a change in actuarial standards of practice, and possibly supporting guidance from the CIA in the form of research papers or educational notes. Similarly, changes in accounting standards may be accompanied by changes in regulatory requirements and also changes in actuarial standards of practice. It is often difficult to determine which organization originates the change. What is more important, and has been more important to the success of the Canadian regulatory environment, is the continual interaction between the key parties.

The 1980s

P&C insurers were first required to file annual statements in a proscribed format as set out by the federal regulator in the early 1980s. In these financial statements, the liabilities were required to include unearned premiums and a provision for claims, including a provision for claims incurred but not reported. At that time, there were different requirements for life insurers and P&C insurers. Life insurance companies were required to appoint a valuation actuary, who was mandated to be a Fellow of the CIA (FCIA), to certify the adequacy of the actuarial reserves and the appropriateness of the assumptions. There was no similar requirement for professional certification as to the adequacy of the claims and unearned premium reserves for P&C insurance companies.

Following the poor financial results of the P&C industry in 1981 and 1982, including the failure of three federally registered companies and two provincially registered companies, several proposals for legislative reform were put forward by the federal Superintendent of Insurance.

[7] Federation of Regulatory Counsel, Inc., Vol. 14, Edition 3 – Fall 2003, http://www.forc.org/public/journals/14, accessed November 2010.

These initiatives were directed at:

— Initial and continuing capital and surplus requirements

— The adequacy of security provided by reinsurance arrangements as well as incentives for direct writing companies to write good quality business

— Quality and collectability of assets

— The adequacy of claims and other reserves[8]

It was recognized that the adequacy of claims reserves was fundamental to the financial health of P&C insurance companies. Thus, it was proposed that P&C insurers be required to provide an annual certificate signed by an appropriately qualified actuary. At the November 1983 CAS annual meeting, Robert Hammond (federal Superintendent of Insurance) stated that it was anticipated that "the person signing the certificate will be required to state that in his or her opinion, the provision for outstanding claims represents a fair and reasonable estimate of the amounts that, together with amounts to be recovered from reinsurers, will be required to settle the claims."[9] Hammond noted that the objective of such a requirement was to focus greater attention on the adequacy of claims reserves and to encourage more direct involvement in the industry of actuaries qualified in the P&C field.

Hammond also discussed the importance of reinsurance to P&C insurers:

> Reinsurance is so important to the financial soundness of most property and casualty insurance companies that we think we must insist that the actuary expand his certificate beyond the net reserves retained by the company. We think that the actuary must review the adequacy and the appropriateness of the reinsurance arrangements and be prepared to express a view on the recoverability of amounts that will be due from reinsurers.[10]

Hammond continued:

> We acknowledge that these proposals regarding required reports from casualty actuaries need to be refined. Certainly, before anything is put into legislation, we plan to discuss our proposals in detail with the profession. I think the important point is that we see our proposals as being a step towards requiring more actuarial involvement in the property and casualty industry in Canada. Reliance on the professionalism of the actuary has been one of the cornerstones in the development of the existing supervisory system in Canada for life insurance companies and I believe that we should be moving in the same direction for the property and casualty industry.
>
> One of the practical problems we must face in moving in this direction is the lack of actuaries in Canada qualified to practice in the casualty field. For this reason, the proposals as originally published suggested that in certain specified circumstances, and with the approval of the Superintendent, an opinion from

[8] Hammond 1983.
[9] Hammond 1983.
[10] Hammond 1983.

> someone other than an actuary might be accepted. I view this option as being only part of a transition stage until such time as there are a sufficient number of qualified actuaries practicing in Canada to meet the need.[11]

At the end of Hammond's speech, he noted that "we are currently trying to recruit a casualty actuary for the Department's staff."[12]

The 1990s

As noted, most of the initial efforts in Canada directed at solvency testing were focused on life insurance companies. This was a joint effort of regulatory initiatives and developments in the CIA standards of practice directed at actuaries working with life insurance companies. There is a long-standing tradition, spanning more than two decades, of collaboration between the CIA and regulators, particularly at the federal level, to ensure the financial strength of Canadian insurance companies.

The failures of the early 1980s resulted in changes to the *ICA* in the following decade: [13]

— Surplus test provisions were strengthened by providing for minimums based on written premiums and incurred claims as well as the existing margins on reserves

— Regulations were issued to address the excessive use of reinsurance as well as the use of unregistered reinsurance

— Actuarial certification of the adequacy of outstanding claims and unearned premium provisions was required for all P&C insurance companies' 1992 annual statements

Another initiative resulting from the failures of the early 1980s was the creation of PACICC.[14]

Bill C-28, which was introduced in Parliament on June 19, 1991, introduced the concept of the appointed actuary (AA). According to this Bill, the AA had reporting duties beyond the traditional reserve certification duties:[15]

— The AA must report on the value of actuarial and other policy liabilities of the company at the end of the financial year according to generally accepted actuarial practice

— The AA should report on the financial condition of the company, including the expected future financial condition of the company (commonly known as the report on dynamic capital adequacy testing, or DCAT report)

— The AA should report on any matters that have come to the actuary's attention, that, in the actuary's opinion, have material adverse effect on the financial position of the company and require rectification

[11] Hammond 1983.
[12] Hammond 1983.
[13] "Solvency Regulation in Canada" by CIA P&C Solvency Subcommittee consisting of R. Gauthier, B. Addie, J. Côté, A. Lessard, and C. Townsend, May 1992.
[14] "Solvency Regulation in Canada," May 1992.
[15] "Solvency Regulation in Canada," May 1992.

Initially, the requirement for a DCAT report did not apply to all insurance companies, instead it was noted that such a report may be required for a particular company by the regulator. The changes implemented in the 1990s to the *ICA* continue to exist in large part today, with the extension of the requirement for DCAT reports to all federally regulated insurers.

The 2000s

There were several significant initiatives in the 2000s. Until 2003, OSFI directed that the valuation of policy liabilities should not reflect the time value of money.[16] Effective January 1, 2003, federally regulated P&C insurers started including discounted policy liabilities in their financial statements. OSFI implemented the minimum capital test (MCT) at year-end 2003 and mandated external review of AA reports starting with the 2003 actuarial reports.

There were important accounting changes effective for annual and interim accounting periods in fiscal years beginning on or after October 1, 2006. The Accounting Standards Board (AcSB) introduced new standards to address when an entity would recognize a financial instrument on its balance sheet and how the financial instrument would be measured once recognized. The new standards included the following sections in the CICA Standards and Guidance Collection:

— CICA 3855, Financial Instruments – Recognition and Measurement
— CICA 1530, Comprehensive Income

While insurance contracts were excluded from the scope of the new accounting standards, and thus not directly affected, the use by actuaries of a portfolio-based discount rate in the determination of the actuarial present value of the policy liabilities resulted in an indirect effect.

[16] P&C Loss Reserve Discounting Canadian Perspective, Claudette Cantin, CIA Spring Meeting, June 18, 2008.

PART 5 – CURRENT CANADIAN REGULATORY REQUIREMENTS OF THE ACTUARY – FEDERAL REGULATION

Requirements for P&C actuaries working with federally regulated P&C insurance companies arise from acts and regulations as well as other forms of guidance issued by OSFI, including but not limited to:[17]

- Guidelines and related advisories
- Regulatory and legislative advisories
- Rulings
- Supervisory advisories

In this part of our report, we describe the sections of the *ICA* that are relevant to actuaries, numerous guidelines that have applicability to actuaries, and OSFI's *Memorandum for the Appointed Actuary's Report on Property and Casualty Insurance Business*. We focus on presenting a summary of current regulatory requirements as opposed to the evolution of such requirements.

Insurance Companies Act of Canada

For federally regulated insurers, the role of the actuary is enshrined in the *ICA*. The requirement to appoint an actuary is set out in the first section of Part IV – Organization and Commencement. Specifically, Section 49(1) (First directors' meeting) states: "After letters patent incorporating a company or society are issued, a meeting of the directors of the company or society shall be held at which the directors shall appoint an actuary to be the actuary of the company or society." The company must notify the Superintendent, in writing, of the appointment (357, 623(1)).[18]

Details regarding the actuarial role and responsibilities are set out in Part VI – Corporate Governance, Division XIV – Actuaries, which is organized as follows:

- Appointment
  - Notice of appointment
  - Officer precluded
  - Chief financial officer

- Vacancies
  - Revocation of appointment
  - Ceasing to hold office
  - Filing vacancy
  - Statement of actuary
  - Duty of replacement actuary

[17] http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DetailId=178, "Property and Casualty Insurance Companies Section," accessed November 2010.
[18] Applicable sections of the *ICA* are noted parenthetically.

- Valuations and reports
  - Actuary’s valuation
  - Superintendent may appoint actuary
  - Right to information
  - Actuary’s report
  - Report to directors
  - Report to officers

- Qualified privilege
  - Qualified privilege for statements

In the *ICA*, the actuary is defined to be a “Fellow of the Canadian Institute of Actuaries” (2(1)) (FCIA). The actuary is required to value the actuarial and other policy liabilities of the company as at the end of a financial year and any other matter specified in any direction that may be made by the Superintendent. The *ICA* specifies that the actuary’s valuation shall be in accordance with generally accepted actuarial practice with such changes as may be determined by the Superintendent and any additional directions that may be made by the Superintendent (365, 629).

The actuary’s right to information is specified in the *ICA* (366(1)). Upon request of the actuary of a company, the present or former directors, officers, employees or representatives of the company shall, to the extent that they are reasonably able to do so, permit access to such records held by the company, and provide such information and explanations that are, in the opinion of the actuary, necessary to enable the actuary to perform the duties of actuary of the company.

The *ICA* mandates the time frame in which the actuary must present his or her report (not less than twenty-one days before the date of the annual meeting of the shareholders and policyholders of the company) (367(1)). While the *ICA* states that the actuary shall make a report in the “prescribed form,” such form is set out in an annual memorandum from OSFI and not in the *ICA* itself. The actuary’s report is required to state whether, in the actuary’s opinion, the annual statement fairly presents the results of the valuation (367(2)).

According to the *ICA*, the actuary of a company is required to meet either with the directors of the company or, where the directors so choose, with the audit committee of the company at least once during each financial year. The purpose of such meetings is to report, in accordance with generally accepted actuarial practice and any direction that may be made by the Superintendent, on the financial position of the company and, where so specified in such a direction, the expected future financial condition of the company (368). The actuarial report on the financial position is more commonly known as the DCAT report.

The actuary of a company is required (by the *ICA*) to report in writing to the chief executive officer and chief financial officer of the company any matters that have come to the actuary’s attention in the course of carrying out the actuary’s duties and that in the actuary’s opinion have material adverse effects on the financial condition of the company and require rectification (369(1)). An actuary of a company who makes such a report is required to provide a copy of it to the directors of the company (369(2)). Where, in the opinion of the actuary of the company, suitable action is not taken to rectify the matters referred to in such a report, the actuary is required to send a copy of the report to the Superintendent and advise the directors that the actuary has done so (369(3)).

Similar requirements exist for foreign companies as set out in Part XIII – Foreign Companies.

Further requirements for actuarial reporting are outlined in Part XV – Regulation of Companies, Societies, Foreign Companies and Provincial Companies – Superintendent. Specifically, Section 667(2) requires: "The actuary of a company, society, foreign company or provincial company shall make, and the company, society, foreign company or provincial company shall file with its annual return, a report in a form determined by the Superintendent on the reserve." The liabilities shown in the annual return are required to include as a reserve the value of the actuarial and other policy liabilities (667(1)).

OSFI Guidelines

> OSFI publishes guidelines, which are essentially best or prudent practices, that it expects financial institutions to follow. Guidelines are used to set standards to govern industry activities and behaviour. These include solvency standards (capital adequacy), prudential standards (large exposure limits, portfolio mix), and accounting standards (e.g., non-accrual loans, transfer of assets, etc.).[19]

OSFI also issues guidelines related to corporate governance, also categorized (by OSFI) as "Sound Business and Financial Practices."[20] In this section, we highlight OSFI guidelines that either directly or indirectly address solvency requirements and are of relevance to P&C actuaries.

We describe the following:[21]

— *Appointed Actuary: Legal Requirements, Qualifications and External Review, Guideline E-15*

— *Minimum Capital Test (MCT) for Federally Regulated Property and Casualty Insurance Companies, Guideline A*

— *Internal Target Capital Ratio for Insurance Companies, Guideline A-4*

— *Annual Disclosures (Property and Casualty Insurance Enterprises), Guideline D-1B*

— *Accounting for Reinsurance of Short-Term Insurance Contracts by Property and Casualty Insurance Enterprises, Guideline D-7*

— *Earthquake Exposure Sound Practices, Guideline B-9*[22]

— *Stress Testing, Guideline E-18*

— *Sound Reinsurance Practices and Procedures, (Corporate Governance) Guideline B-3*

It is important to emphasize the collaborative process with which OSFI operates. Guidelines, such as those described below, are developed based on consultation with representatives from the insurance industry as well as input from professional organizations such as the CIA, CICA, and

[19] "Table of OSFI Guidelines," http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DeailID=527 , accessed November 2010.
[20] "Table of OSFI Guidelines," http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DeailID=527 , accessed November 2010.
[21] It is important to recognize that there are other OSFI guidelines that are applicable to P&C insurance companies and may have relevance to P&C actuaries, depending on their area of focus.
[22] Note *Guideline B-9* is currently in the process of review for reissue by OSFI.

other key stakeholders. Guidelines are typically released in draft format with a comment period for feedback from the industry.

Appointed Actuary: Legal Requirements, Qualifications and External Review, Guideline E-15

Guideline E-15, first issued in August 2003 and revised in November 2006, is applicable to actuaries working with life and P&C insurance companies. The "Introduction" to *Guideline E-15* states:

> This Guideline describes the role of the Appointed Actuary in federally regulated insurance companies and sets out some of OSFI's expectations with respect to that role. The Guideline is divided into three parts. The first part summarizes the major responsibilities of the actuary as described in the *Insurance Companies Act* (*ICA*) and the related Guidelines and Memoranda published by OSFI. The second part deals with the actuary's qualifications to carry out the Appointed Actuary's role, and the third part sets out OSFI's expectations with respect to external review of the Appointed Actuary's work and reports.
>
> Other OSFI Guidelines and Memoranda contain additional information related to the responsibilities of the Appointed Actuary. Particularly important in this regard is the annual Memorandum to the Appointed Actuary. Separate versions are issued to actuaries of life insurance companies and to actuaries of property and casualty insurance companies.[23]

In "Section 1: Legal Requirements of the Appointed Actuary" of *Guideline E-15*, OSFI expands on the *ICA* requirements with respect to DCAT reporting. OSFI states:

> The Superintendent expects that a report on the company's expected future financial condition will be prepared annually in compliance with the CIA standards. A DCAT report shall be based on the prior year end financial position or a more recent position. If the DCAT Report is presented to the board of directors in the second half of the financial year, then it shall include material changes in experience and in financial position up to the period of 90 days before the date of the presentation. It is expected that the projection period for studies of P&C companies will be for at least three years. A copy of the report will be filed with OSFI within thirty days of presentation to the company's directors, but no later than the end of the calendar year.[24]

The qualification requirements for the AA are detailed in "Section 2: Qualifications Required" of *Guideline E-15*. As noted previously, the *ICA* requires that the actuary be an FCIA. *Guideline E-15* states that in assessing the suitability of an AA, the Superintendent expects that the AA has each of the following qualifications:[25]

[23] *Guideline E-15*, November 2006, cover note.
[24] *Guideline E-15*, November 2006, page 4.
[25] *Guideline E-15*, November 2006, page 6.

1. Has appropriate Canadian practical experience, which is defined as Work in Canada for at least three of the last six years, of which at least one year was performing valuation of Canadian actuarial liabilities of an insurance company;

2. Has experience with the CIA's Standards of Practice and relevant insurance legislation and regulation;

3. Is up to date with respect to the CIA's Continuing Professional Development requirement;

4. If the CIA in future requires an Appointed Actuary's Certificate, is in possession of an up-to-date Appointed Actuary Certificate from the CIA; and

5. Has not been the subject of an adverse finding by a CIA Disciplinary Tribunal. Where there has been such a finding, the Superintendent may nevertheless conclude that the AA is a suitable person if the circumstances of the case and other information support such a conclusion.

The final section of *Guideline E-15* is directed at external review of the work of the actuary. The guideline states:

> OSFI believes that regular external review of certain work by the AA, and the resulting provision to the AA of additional professional education, would be of significant benefit to a company's stakeholders by contributing to the safety and soundness of insurance companies, as described in the general objectives below. Consequently, OSFI expects that all federally regulated insurance companies will appoint external reviewers to implement external review processes consistent with the OSFI criteria described below. The external review should be made in accordance with accepted actuarial practice as specified in the CIA's *Standards of Practice*, in particular with Section 1640 of these standards and any related educational note.[26]

For P&C insurers, the external reviewer is expected to:[27]

1. Ascertain that the work of the AA is within the range of accepted actuarial practice, as established by the CIA, and is consistent with any objectives or requirements established by OSFI in Regulations, Guidelines or the Memorandum to the AA (Note that the external review work is not intended to duplicate the work of the external auditor.);

2. Review the adequacy of procedures, systems and the work of others relied on by the AA, to the extent that these are not reviewed by the external auditor. This includes checks on data integrity and checks on procedures and methodologies used to validate the calculations and results;

3. Discuss with the AA the appropriateness of each of the assumptions made and the methods employed in the valuation of actuarial policy liabilities and

[26] *Guideline E-15*, November 2006, page 7.
[27] *Guideline E-15*, November 2006, pages 7 and 8.

ascertain that the assumptions are at the appropriate point in the range of accepted actuarial practice, given the circumstances of the company;

4. Determine whether the AA report accurately describes the assumptions and methodology employed by the AA;

5. Review and discuss with the AA the methodology, assumptions and scenarios used for future financial condition reporting as required by the Superintendent, usually based on DCAT.

Minimum Capital Test (MCT) for Federally Regulated Property and Casualty Insurance Companies, Guideline A (Draft)

Draft Guideline A was released in May 2011. The Cover Note of *Guideline A* states:

> Subsection 515(1) of the *Insurance Companies Act (ICA)* requires Federally Regulated Property and Casualty Insurance Companies (P&C insurance companies) to maintain adequate capital. Subsection 608(1) of the *ICA* requires foreign companies operating in Canada on a branch basis (foreign companies) to maintain an adequate margin of assets in Canada over liabilities in Canada. The MCT Guideline is not made pursuant to subsections 515(2) and 608(3) of the *Act*. However, the minimum and supervisory target capital standards set out in this guideline provide the framework within which the Superintendent assesses whether a P&C insurer maintains adequate capital pursuant to subsection 515(2) and whether a foreign company maintains an adequate margin pursuant to subsection 608(1). Notwithstanding that a P&C insurer may meet these standards, the Superintendent may direct the insurer to increase its capital under subsection 515(3) or the foreign company to increase the margin of assets in Canada over liabilities in Canada under subsection 608(4).
>
> This guideline outlines the capital framework, using a risk-based formula for minimum capital/margin required, and defines the capital/assets that are available to meet the minimum standard. The MCT determines the minimum capital/margin required and not necessarily the optimum capital/margin required.
>
> Foreign companies are reminded that the MCT is only a component of the required assets that must be maintained in Canada by foreign insurers. Foreign companies must vest assets in accordance with the Adequacy of Assets in Canada test as prescribed in the *Assets (Foreign Companies) Regulations.*

Actuaries rely on *Guideline A* as they assist P&C insurance companies prepare and analyze MCT calculations and in the DCAT process.

Internet Target Capital Ratio for Insurance Companies, Guideline A-4

Guideline A-4, which was released by OSFI in June 2011, is applicable to life and P&C domestic insurers as well as foreign insurance company branches. *Guideline A-4* replaced an OSFI Advisory titled *MCT and BAAT Supervisory Targets,* dated December 2003. The guideline sets out OSFI's expectations with respect to setting an internal capital ratio and capital management policies.[28]

Guideline A-4 is organized in five parts:

I. The role of capital in OSFI's risk assessment process
II. Regulatory capital ratios
III. Establishing an internal target capital ratio
IV. Capital management policy
V. Corrective management actions

Guideline A-4 also includes an Appendix titled "Determining an Internal Target Capital Ratio."

Guideline A-4 states that an insurer's capital planning process should forward thinking and incorporate rigorous stress testing and scenarios that identify possible events or changes in market conditions that could adversely impact the insurer.[29]

Many actuaries are taking an active role in capital planning and management at Canadian P&C insurers, particularly in the development of internal models (also referred to as economic capital models). Furthermore, actuaries are also responsible for the DCAT process. While there is no specific reference to the role of actuaries in *Guideline A-4*, actuaries working in this area would be expected to be familiar with the requirements as set out in the guideline.

Annual Disclosures (Property and Casualty Insurance Enterprises), Guideline D-1B

Guideline D-1B was initially released December 2001 and revised in October 2006, February 2009, and most recently in July 2010. The guideline applies to domestically incorporated P&C insurers and Canadian branches of foreign P&C insurance companies. *Guideline D-1B* states:

> OSFI expects all P&C insurance enterprises to include required IFRSs disclosures and disclosures required by this Guideline in their OSFI annual return or supplementary management report appended to the annual return.[30]

As the focus of most IFRS disclosures is accounting policies, it is anticipated that the accountants preparing the insurer's financial statements will have primary responsibility for such disclosures. However, the actuary may want to provide input or may be asked for input. Thus, actuaries working in the area of financial reporting would be expected to be familiar with the requirements set out in *Guideline D-1B.*

Accounting for Reinsurance of Short-Term Insurance Contracts by Property and Casualty Insurance Enterprises, Guideline D-7

The cover note of *Guideline D-7*, which was released February 1998, states:

[28] *Guideline A-4*, June 2011, cover note.
[29] *Guideline A-4*, Section III.
[30] *Guideline D-1B*, July 2010, cover note.

> The guideline outlines the conditions that **reinsurance** of **short-term insurance contracts** must meet in order to be accounted for as reinsurance by federally regulated property and casualty insurance enterprises. It also sets out the accounting standards to be applied to these **reinsurance** contracts.
>
> The guideline applies to all **ceding enterprises** including **assuming enterprises** that retrocede insurance risks. The guideline also applies to assuming enterprises, that do not retrocede insurance risks, with respect to the guidance on indemnification against loss or liability and the disclosure requirements, where relevant.[31]

Guideline D-7 is organized as follows:

- Introduction to reinsurance of short-term insurance contracts
- Definition of insurance risk
- Indemnification of a ceding enterprise against loss or liability
- Reporting of assets, liabilities, revenues and costs
- Recognition of revenues, costs, assets and liabilities
- Disclosure
- Appendix - Definition of terms

Many P&C actuaries work for federally regulated reinsurance companies or primary companies in the area of reinsurance. Thus, it would be expected that these actuaries would be familiar with the regulatory requirements as set out in *Guideline D-7*.

Earthquake Exposure Sound Practices, Guideline B-9

Guideline B-9, issued in May 1998, sets out sound practices for the management and measurement of earthquake exposures. Since the end of fiscal year 1998, federally regulated P&C insurers have been required to estimate their probable maximum loss (PML) arising from a major earthquake either through the use of computer-based model(s) or through the application of default loss estimate (DLE) standards. Many actuaries work in the area of catastrophe modeling both within insurance companies and with service providers to insurers and assist companies in complying with *Guideline B-9*.

Guideline B-9 sets out:

- Common parameters
- Insurance coverage information
- Risk characteristics
- Loss estimation factors for consideration in estimating PMLs

The purpose of this information is to enable OSFI to assess an individual insurer's capacity and financial preparedness for a major earthquake.

[31] *Guideline D-7*, February 1998, cover note, bold terms indicated defined terms.

Stress Testing, Guideline E-18

Guideline E-18 was released December 2009 and is applicable to numerous types of financial institutions, including P&C insurers. *Guideline E-18* defines stress testing, which includes scenario testing and sensitivity testing, as "a risk management technique used to evaluate the potential effects on an institution's financial condition, of a set of specified changes in risk factors, corresponding to exceptional but plausible events."[32] This guideline identifies four purposes of stress testing:

- Risk identification and control
- Providing a complementary risk perspective to other risk management tools
- Supporting capital management
- Improving liquidity management

With respect to capital management, *Guideline E-18* states:

> Stress testing should form an integral part of institutions' internal capital management where rigorous, forward-looking stress testing can identify severe events, including a series of compounding events, or changes in market conditions that could adversely impact the institution.[33]

Guideline E-18 is organized in the following sections:

- Stress testing defined
- Purposes of stress testing
- Role of the board and senior management
- General considerations for stress testing programs
- Methodology and scenario selection
- Specific areas of focus
  - Risk mitigation
  - Securitization and warehousing risks
  - Risks to reputation
  - Counterparty credit risk
  - Risk concentrations
- Supervisory considerations
- Glossary

It is expected that actuaries will play a role in responding to the requirements of *Guideline E-18*, particularly through the use of DCAT models. Thus, actuaries would be expected to be familiar with the guideline.

Sound Reinsurance Practices and Procedures, (Corporate Governance) Guideline B-3

In December 2010, OSFI released (*Corporate Governance) Guideline B-3*. The cover note to this guideline states:

[32] *Guideline E-18*, December 2009, page 2.
[33] *Guideline E-18*, December 2009, page 3.

> Reinsurance is an important risk management tool available to an insurer. It can be used to reduce insurance risks and the volatility of financial results, stabilize solvency, make more efficient use of capital, better withstand catastrophic events, increase underwriting capacity, and to draw on reinsurers' expertise. However, reinsurance exposes an insurer to other risks, including operational, legal, counterparty, and liquidity risks. The combination of these risks can make reinsurance complex and challenging to implement effectively. Inadequate reinsurance risk management practices and procedures can materially affect an insurer's financial soundness and reputation, and can ultimately contribute to its failure.
>
> This Guideline sets out OSFI's expectations for effective reinsurance practices and procedures. These practices and procedures should form an important part of an insurer's overall reinsurance risk management plan. It applies to all federally regulated insurers, including life insurers and property and casualty insurers, domestic insurance companies and foreign insurance companies in respect of their insurance business in Canada, registered reinsurers, and fraternal benefit societies (collectively referred to as FRIs), that are party to reinsurance cessions, retrocessions, and, where applicable, to assumption reinsurance transactions.[34]

Similar to our comments about *Guideline D*-7, it is expected that the many P&C actuaries who work for federally regulated reinsurance companies or primary companies in the area of reinsurance would be familiar with the regulatory requirements as set out in *Guideline B-3*.

Memorandum for the Appointed Actuary's Report on Property and Casualty Insurance Business

The *Memorandum for the Appointed Actuary's Report on Property and Casualty Insurance Business* (*OSFI Memo to the AA*) provides critical guidance to P&C actuaries on an annual basis. Pursuant to Section 667 of the *ICA*, OSFI routinely updates this guidance, and typically releases it in the early fall of each year. The purpose of the *OSFI Memo to the AA* is to describe the guidelines and requirements for AAs who prepare reports to be filed with the P&C-1 and P&C-2 annual returns. The *OSFI Memo to the AA* applies to federally regulated P&C insurance companies and branches.[35]

The "Introduction" of the 2010 *OSFI Memo to the AA* states:

> This Memorandum describes the requirements of the Office of the Superintendent of Financial Institutions (OSFI) with respect to the Appointed Actuary's Report (AAR), sets out the minimum standards used in determining the acceptability of the AAR and provides guidance for actuaries preparing reports in matters relating to presentation, level of detail and nature of the discussions to be included.
>
> …

[34] *Guideline B-3*, December 2010, cover note.

[35] Cover letter from Stuart Wason, Senior Director, Actuarial Division, Regulation Sector, to the *OSFI Memo to the AA*, October 26, 2010. Mr. Wason notes that for companies regulated by FSCO, the requirements are basically the same apart from differences due to differences in laws, regulations and filing instructions.

> Many insurers are required to file an AAR, as part of the Annual Return forms, with more than one regulator, federal or provincial, in Canada. It is the responsibility of the insurer to ensure that the AAR submitted as part of the Annual Return to each regulator complies with the requirements of that regulator.
>
> The term AAR refers to the detailed actuarial report submitted to a regulator. This includes the opinion of the Appointed Actuary (Actuary) concerning the fairness and adequacy of the policy liabilities included in the insurer's financial statements, a detailed commentary, data exhibits and calculations supporting that opinion.
>
> An important purpose of the AAR is to give the regulator a comprehensive report documenting the work done by the Actuary to calculate the policy liabilities. The AAR is a key component in OSFI's review process of the company's actuarial financial position and profile.
>
> The AAR should not be considered to solely be a report from the company's Actuary to the regulator's actuaries. It is also intended for company management and is read by regulators who are not actuaries but who are knowledgeable about insurance. It should be a generally understandable presentation that can be used as a key component in the regulator's monitoring of the company's financial results.[36]

Recognizing the significant role of the 2010 *OSFI Memo to the AA*, we include a copy of the Table of Contents as Appendix B of this report.

[36] *OSFI Memo to the AA*, 2010, page 4.

PART 6 – CURRENT CANADIAN REGULATORY REQUIREMENTS OF THE ACTUARY – PROVINCIAL REGULATION

Generally, the role of provincial superintendents of insurance across Canada is focused to a greater extent on issues such as market conduct, consumer protection, rate and form regulation rather than solvency monitoring.[37] There are significant differences between the provinces in the extent of insurance company regulation directed at solvency monitoring. This is evident in our review of the provincial insurance acts, provincial regulations, and guidelines, as well as our discussions with provincial regulators. Some provinces contract out examinations and solvency monitoring to OSFI.

In this part of the report, we first compare the insurance acts of the provinces and then describe current regulatory requirements arising from the offices of the provincial superintendents of insurance.

Provincial Insurance Legislation

With respect to the actuary, the *Insurance Acts* of Alberta and Ontario are very similar to the federal *ICA*, both in structure and content. In Quebec, *An Act Respecting Insurance* contains most of the same provisions regarding the actuary as the federal *ICA* as does the *Financial Institutions Act* of British Columbia.[38]

In contrast, the only mention of actuary in the insurance acts of Nunavut, Yukon, and Northwest Territories is the definition: "Actuary means a Fellow of the Canadian Institute of Actuaries." In Nova Scotia, there is no reference to actuary in the *Insurance Act*. In Newfoundland, Section 84 Auditor's Report (c) states: "the auditor has examined the reserve for unpaid claims and whether in his or her opinion it is adequate." There is no mention in the Newfoundland *Insurance Act* of the role of the actuary in such examination or the necessity of a review of the premium liabilities.

In New Brunswick, the only mention of the actuary is in relation to fraternal societies; and in Prince Edward Island only to fraternal societies and life insurers. There are requirements set out in these insurance acts for a certified valuation and a statement as to the financial condition of fraternal societies but not for P&C insurance companies.

The *Insurance Act* of Manitoba has similar actuarial requirements as Prince Edward Island and New Brunswick for fraternal societies. However, unlike Prince Edward Island and New Brunswick, the *Insurance Act* of Manitoba does include provisions for:[39]

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[37] J. Brian Reeve, Esq., Federation of Regulatory Counsel, Inc., Vol. 14, Edition 3 – Fall 2003, http://www.forc.org/public/journals/14, accessed November 2010.
[38] http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/30_325_90 and http://www.canlii.org/en/qc/laws/stat/rsq-c-a-32/latest/rsq-c-a-32.html accessed November 2010.
[39] Part II, General Provision Applicable to Insurers in Manitoba Carrying on Business, section titled "Supplementary Provisions Respecting Corporate Governance of Insurers Incorporated in Manitoba," http://web2.gov.mb.ca/laws/statutes/ccsm/i040e.php, accessed November 2010.

- Appointing the actuary
- Filling a vacancy in actuary's position
- The Superintendent's right to exempt certain insurers from the requirement of an actuary
- Statement required when an actuary resigns or appointment is revoked
- Duty of a replacement actuary and exceptions to such duty
- Effects of non-compliance with provisions in the *Insurance Act*

The only other mention of actuary in the *Insurance Act* of Manitoba is in Section 41.20(1) Duties of the audit committee. The *Insurance Act* sets out five requirements as to what must be reviewed by the audit committee and three requirements as to whom the audit committee must meet. According to item (g), the audit committee shall "meet with the insurer's actuary to discuss the parts of the annual financial statements and the annual return prepared by the actuary."

Similar to Manitoba, the requirements set out in the Saskatchewan *Insurance Act* are significantly less than those in the *ICA* or the insurance legislation of British Columbia, Alberta, Ontario, and Quebec. In Saskatchewan, just as in many other insurance acts, actuary is formally defined to mean a FCIA. The role of the actuary is addressed in "RECORDS AND RETURNS, Annual return re provincial insurers, Section 86":

> 86(5) The annual return must be accompanied by the following:
>
> …
>
> c) if required by the superintendent, an actuary's report that:
>   i. is conducted and prepared in accordance with this Act and the regulations; and
>   ii. is satisfactory to the superintendent.
>
> 86.2(1) Subject to subsection (2):
>
> …
>
> c) every actuary's report prepared pursuant to this Act or the regulations must be prepared in accordance with accepted actuarial practices described in the Standards of Practice of the Canadian Institute of Actuaries, as amended from time to time.

The other reference to actuary in the Saskatchewan *Insurance Act* appears in Section 467 which addresses the powers of the Lieutenant Governor in Council. Section 467(p.2) states: "respecting any actuary's report that a provincial insurer or reciprocal insurance exchange may be required to submit to the superintendent, including the content, form and scope of the actuary's report and the manner in which it is conducted."

Provincial Insurance Oversight of Solvency[40]

Alberta

According to our discussion with a representative from Alberta Finance and Enterprise, there are seven provincially regulated P&C companies in Alberta. There is a requirement that all

[40] It appears that some provincial regulators did not count farm mutual organizations when responding to our question about the number of P&C insurance companies currently operating under provincial supervision. In this section, we report the number of companies based on the feedback we received from the provincial regulators. Thus, these numbers may not represent the total number of provincial P&C companies.

provincially regulated insurers submit an actuary's report supporting the policy liabilities with the annual return. The annual return follows the format of OSFI's P&C-1 and includes the MCT schedule.

The provincial regulator requires DCAT reports for most, though not all of the provincially regulated companies. Some exceptions are made for small companies where the cost is deemed to exceed the benefit of such an analysis. The requirement for a DCAT report was set out by a request from the regulator, as opposed to the development of a regulatory guideline or ruling. DCAT reports were first required around two years ago; such reports are now required on an annual basis (unless a company has an exemption).

British Columbia

The Financial Institutions Commission (FICOM) in British Columbia has adopted many of the federal guidelines directed at solvency. Recent Information Bulletins from FICOM include:

— Endorsed the report of the Property and Casualty MCT Advisory Committee (P&C MAC) titled *Key Principles for the Future Direction of the Canadian Regulatory Capital Framework for Property & Casualty (P&C) Insurance* (FICOM INS-10-004, April 2010)

— Adopted *Stress Testing, Guideline E-18* which sets out expectations and consideration for stress testing programs, and in particular, the DCAT for insurance companies (FICOM INS-10-002, March 2010)

Filing Requirements for British Columbia Incorporated General Insurance Companies (FICOM INS-07-001), dated September 2007, lists annual, quarterly, and other statutory filing requirements of FICOM. Requirements include, but are not limited to:

— P&C-1
— Auditor's report
— Actuary's report
— Earthquake returns and report
— DCAT report

Manitoba

Based on discussions with the provincial regulator, we understand that there is only one provincially regulated insurer, excluding reciprocal insurance exchanges and Manitoba Public Insurance (the provincial automobile insurer), in Manitoba. There is not a requirement for an annual DCAT report nor an actuary's report or opinion supporting the policy liabilities. The company is required to report financial results in accordance with the P&C-1 which contains MCT calculations.

New Brunswick

Based on information provided by the provincial regulator through email, there are five provincially regulated insurers in New Brunswick, four mutual insurers and one incorporated P&C insurer. Historically, the Superintendent has determined, on an annual basis, whether a

DCAT report is required on a company by company basis, with the advice of the Examinations Branch. Similarly, the Superintendent annually determines, on a company by company basis, whether an actuarial report and opinion statement are required in support of the annual financial statement. P&C insurers submit the P&C-1 which includes the reporting of the MCT results. According to David Weir, Deputy Superintendent, Insurance Branch, Department of Justice, there is a requirement to follow MCT guidelines set out by OSFI. Finally, the requirement for external review of actuarial reports is also at the discretion of the Superintendent.

Nova Scotia

We spoke with the provincial regulator of Nova Scotia regarding the regulatory requirements for P&C insurers incorporated in Nova Scotia. According to the regulator, there are three provincial insurers, one of which is a reciprocal and one a life insurer. For the provincially regulated P&C insurer, there is a regulatory requirement, set out in a general request by the Superintendent of Insurance, for an annual DCAT report and an actuarial report in support of the policy liabilities. The insurer must follow MCT reporting requirements that are similar to OSFI's requirements. There is no requirement for external review of the actuarial reports.

Newfoundland and Labrador

There are two provincially regulated P&C insurers in Newfoundland. There is no requirement for a DCAT report for these companies. There is, however, a requirement for an actuarial report and opinion statement which supports the policy liabilities as reported in the annual return. The annual return follows the format of OSFI's P&C-1 and includes the MCT schedules.

Ontario

The Financial Services Commission of Ontario (FSCO) has adopted much of the guidance related to solvency set out by OSFI. FSCO's *2009 Memorandum for Actuarial Report on Property and Casualty Insurance Business* states that with the exception of mutual insurance corporations that are members of the Fire Mutuals Guarantee Fund, all P&C insurers and reciprocals are required to submit an actuarial valuation report with their annual statements. "Ontario requirements are mostly the same as those issued by OSFI, except differences in the review procedure and filing directions."[41] Based on discussions with FSCO, we understand that one difference between the provincial and federal instructions to the AA in 2010 relates to the number of years required for the summary of loss development. FSCO will continue to require a five year loss development schedule and OSFI moved to a ten year schedule effective with 2010 year-end AA reports.

FSCO has also adopted OSFI's *Minimum Capital Test Guideline for Property and Casualty Insurance Companies* as well as the annual return and instructions (including the *OSFI Memo to the AA*).[42] According to "Filing Information for Insurers Licensed in Ontario," FSCO requires P&C companies incorporated in Ontario to file:

- P&C-1
- Auditor's report

[41] *2009 Memorandum for Actuarial Report on Property and Casualty Insurance Business*, December 30, 2009, cover memorandum from Dennis Chan, Chief Actuary (Insurance).
[42] http://www.fsco.gov.on.ca/english/forms/annualreturns/default.asp, accessed November 2010.

— Actuary's report
— Data diskette
— DCAT report

Quebec

The *Autorité des marchés financiers* (*AMF*) has a long standing history of active supervision, directed at both solvency and market conduct, for both provincially regulated insurers and insurers licensed to conduct business in Quebec. The "Introduction" to *Financial Institutions Supervisory Framework, Superintendence of Solvency* (*Supervisory Framework*) summarizes AMF's role in solvency monitoring:[43]

> As provided for under its constituting Act, part of the AMF's mission is to: "ensure that the financial institutions and other regulated entities of the financial sector comply with the solvency standards applicable to them as well as with the obligations imposed on them by law with a view to protecting the interests of consumers of financial products and services, and take any measure provided by law for those purposes."
>
> AMF Solvency's mandate is to:
>
> — ensure that financial institutions hold all the necessary authorizations to operate in Québec;
>
> — oversee financial institutions to ensure that they meet the various legal, regulatory and normative requirements, in particular in terms of solvency and sound and prudent management practices; and,
>
> — develop normative tools, such as guidelines or standards, intended for financial institutions in the performance of their activities.

The *Supervisory Framework*, released March 2009, is applicable to P&C insurers incorporated in Quebec. In April 2010, AMF published *Actuarial and Financial Supervision of Non-Quebec Chartered Insurers*, which sets out the solvency framework for institutions doing business in Quebec but incorporated under either federal or another province's law.

Provincial guidelines are directed at many of the same issues addressed by OSFI guidelines. These include but are not limited to:

— *Guideline on Capital Adequacy Requirements Property and Casualty Insurance*, revised June 2008, which addresses MCT for Canadian P&C insurance companies

— *Guideline Assets Adequacy Requirements Property and Casualty Insurance*, October 2004, which addresses BAAT for foreign P&C insurers

[43] *Supervisory Framework*, March 2009, page 3.

— *Guideline Sound Management and Measurements of Earthquake Exposure*, October 1998, which "sets forth sound practices for the management and measurement of earthquake exposure."[44]

— *Reinsurance Risk Management Guideline*, April 2010

The *Guideline on Capital Adequacy Requirements Property and Casualty Insurance* states that most insurers can meet their internal target capital levels

> … by drawing on dynamic capital adequacy testing (DCAT) scenarios and including unfavourable scenarios with higher probability of realization. As well, they would need to consider the variable nature of their MCT result and the impacts of any lag with their target level. Finally, insurers must consider industry results in similar classes of insurance in which they operate.[45]

Saskatchewan

There are eleven provincially regulated Saskatchewan insurance companies and an additional ten reciprocal insurance exchanges (only two of which were set up in the province). Neither the DCAT nor the actuary's report on policy liabilities is required by the *Insurance Act* or regulatory guidelines. However, the Superintendent of Insurance can (and does) require some companies to complete these reports on an annual basis. Provincially regulated insurers in Saskatchewan are required to comply with MCT guidelines that are similar to OSFI. There is no requirement for external review of actuary's reports.

Summary

Financial reporting requirements in Canada are largely harmonized for provincially and federally regulated insurance companies, with all insurers using the same P&C-1 reporting framework. As a result, provincial supervisory authorities have access to standardized capital (minimum capital test, MCT) and other financial metrics. In addition, based on our discussions with Superintendents, many provincial supervisors seek to maintain actuarial or solvency practices in their jurisdictions. A number of provinces, however, do not have the regulatory or statutory support necessary to ensure that those standards are consistently met on an annual basis. For example, while provincial supervisors have access to MCT metrics, some provinces have statutory capital requirements that differ from the MCT. Similarly, 30 years after Hammond spoke of the need for more casualty actuaries engaged in regulatory roles, many provinces do not have internal actuarial resources or resources to facilitate the Superintendent's supervision of provincial insurers.

[44] http://www.lautorite.qc.ca/files/pdf/reglementation/lignes-directrices-assurance/1998oct-ld-tremblement-terre-en.pdf, accessed November 2010
[45] *Guideline on Capital Adequacy Requirements Property and Casualty Insurance*, page 2.

PART 7 – THE CANADIAN INSTITUTE OF ACTUARIES

History of the CIA

On March 18, 1965, the CIA was established by an Act of the federal parliament which set out its purpose as follows:[46]

> The purpose and objects of the Institute shall be the following:
>
> — to advance and develop actuarial science,
> — to promote the application of actuarial science to human affairs, and
> — to establish, promote and maintain high standards of competence and conduct within the actuarial profession.

The CIA serves as the national organization of the actuarial profession in Canada. Actuaries are not licensed by any of the provinces or the federal government. Instead the Fellowship designation of the CIA is referenced by federal and provincial insurance acts as well as federal and provincial regulatory guidance.[47]

Even prior to the formation of the CIA, the statements of life and health insurance companies required an actuary's signature. After the establishment of the CIA, most Canadian jurisdictions introduced the requirement that the actuary must be an FCIA. In 1992, similar requirements became effective for federally registered P&C insurance companies. Around the same time, Ontario and Quebec adopted similar requirements for provincially registered P&C insurers. The CIA initiated a special program to expand the number of P&C actuaries in anticipation of these requirements.

The key responsibilities of the CIA are:[48]

— Accredit actuaries in Canada

— Promote the advancement of actuarial science through research

— Promote continuing professional development activities and ensure that actuarial services provided by its members meet extremely high professional standards

From its inception in 1965 through 2006, the CIA was responsible for developing and enforcing actuarial standards of practice for the profession. In 2005, following the actions of actuarial organizations around the world, the CIA set up a Task Force in Corporate Governance. After a two year review and consultation process, the CIA adopted a new governance structure on January 1, 2007.

Actuarial standards of practice are currently developed by the independent Actuarial Standards Board (ASB). The mission of the ASB is to develop, establish, and maintain standards of practice governing the actuarial profession in Canada. Its objectives are:[49]

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[46] http://www.actuaries.ca/about/history_e.cfm, accessed November 2010.
[47] The common definition of actuary in the *ICA* as well as many provincial insurance acts is a "Fellow of the Canadian Institute of Actuaries" (FCIA).
[48] http://www.actuaries.ca/ASB/relationships_e.cfm, accessed November 2010.

— To provide continuous review of Standards of Practice and determine whether they are in need of alteration, expansion or elimination;

— To direct and manage the development of Standards of Practice in all areas of actuarial practice;

— To adopt Standards of Practice in all areas of actuarial practice, within its sole discretion and pursuant to such procedures as it deems appropriate; and

— To ensure the adequate communication of Standards of Practice to Members, Associates and Affiliates of the Canadian Institute of Actuaries (CIA), public regulatory and judicial bodies, governments, other professions and other members of the public.

The ASB is accountable to the Actuarial Standards Oversight Council (ASOC), which was also established by the CIA on January 1, 2007. The purpose of the ASOC is to serve the public interest through oversight and input into the activities of the ASB. The ASOC is comprised of experienced professionals and business people with backgrounds in the financial sector.

The Practice Council of the CIA is responsible for directing and managing the development of all practice-related material other than standards of practice. The Practice Council oversees all educational notes, research papers, task force reports, and other similar publications for all areas of practice of the CIA.

As indicated previously, the CIA works closely with Canadian regulators, most notably at the federal level. Many provincial and federal insurance acts require that certain documents be approved by FCIAs. "When legislation changes, often the profession's Standards of Practice need to change as well. The regulators often depend on the actuarial profession to adapt its standards, in that the regulations themselves are not specific on actuarial matters. Canada's actuaries are also involved in advocating legislative change to governments in response to demographic or business necessities."[50]

The most substantive developments in actuarial standards of practice for P&C actuaries occurred in the 1990s and early 2000s. While actuarial standards of practice continue to evolve, much of the work of the past decade, excluding the requirements for actuarial external review, can be categorized as refinements and extension of existing practices.

The Crawford Report

One cannot report on the history of the CIA, without including the work and findings of the Crawford Task Force. In July 1988, the CIA created a task force, later known as the Crawford Task Force.[51] This task force, which did not conduct any independent research, met five times and considered the work of other CIA committees and the reports of the Task Force on Strengthening the Profession and the Future of the Actuary. Their report titled *Report of the Task*

[49] http://www.actuaries.ca/ASB/terms_e.cfm, accessed November 2010.
[50] http://www.actuaries.ca/ASB/relationships_e.cfm, accessed November 2010.
[51] Members included: Robert M. Astley, Allan U. Brender, Christopher D. Chapman, Marc Fernet, Michael B. McGuinness, Robert T. Smith, Hugh G. White, Brian Wooding, J. Dickson Crawford, Chairman.

Force on the Future of the Canadian Institute of Actuaries in the North American Context (December 1989) is referred to as *The Crawford Report*.

There were three recommendations that are particularly relevant to PACICC's question about the evolution of the actuarial role and its effect on the solvency of P&C insurers:[52]

— Recommendation 1: That the CIA adopt a new statement of purpose which gives precedence to service in the public interest over self-interest of the member.

— Recommendation 9: That the CIA increase its support of research and development for property and casualty insurance, develop standards of practice for this area, and increase its contribution to basic and continuing education for its students and members on these topics.

— Recommendation 12: That the CIA resolve to improve and expand its contribution to the development and direction of public policy issues in Canada through:

1. A more effective monitoring of emerging issues
2. A more vigorous participation in public policy debates on a timely basis
3. Continued and strengthened contact with government regulators and policy makers.

The CIA Leading to the 1980s

Initially, the CIA was an association of actuaries primarily focused on the exchange of professional information and practical techniques. "The vision of the creation of the CIA in 1965 moved the profession toward the acceptance of responsibility for the qualification and practice of actuaries in order to ensure that the public receives quality work performed by well-trained and skilled professionals."[53]

The Crawford Report addressed the issue of the development of and compliance with professional standards. In the late 1980s, a great deal of attention and effort was devoted to the "amplification of the code of conduct through the preparation and endorsement of new standards of practice."[54] The report identifies three sources of pressure for these changes:[55]

— Members with certificate signing responsibilities sought a clearer foundation of literature on acceptable practice.

— The CICA reviewed the CIA body of standards for the purpose of producing a better basis for the auditor's reliance on the actuary where their work overlapped.

[52] *The Crawford Report*, December 1989.
[53] *The Crawford Report*, December 1989, Section 2A.
[54] *The Crawford Report*, December 1989, Section 2C.
[55] *The Crawford Report*, December 1989, Section 2C.

— Continuing education supports the rooting of the new standard firmly in the regular practice of members, and compliance reviews and disciplinary procedures deal with deviations from official standards.

Recommendation 1 – A Change in the CIA's Mission

In our meeting with Mr. Wieland, he indicated that one of the most pivotal contributions of *The Crawford Report* was a change in the mission of the CIA. This is addressed in Section 3 of the report:[56]

> The essential strength of the profession is that it serves both the public and its own members. This balance has been vital to the success of the CIA. Using the phrases of the Task Force on Strengthening the Profession, the CIA is both a *public interface body* and a *member service organization*.
>
> However, there are times and issues when these two responsibilities can be in conflict. We believe that it is timely to restate our mission and give unequivocal precedence to the public interface role. The Honourable Willard Estey challenged the profession to dedicate itself to this goal in his keynote address at the Centennial Celebration of the Actuarial Profession in June 1989.
>
>> "A commitment by each and every member (of the profession) towards the community interest, humanitarian and other altruistic goals overriding the immediate economic necessities of life of the profession in his daily work."
>
> In his conclusion he returned to this theme:
>
>> "That the highest and always the paramount consideration in a profession is the public interest component over and above self-interest."

The first Guiding Principle of the CIA, as set out in March 1993, states that in carrying on its activities and programs, the CIA holds the duty of the profession to the public above the needs of the profession and its members. The complete Guiding Principles are included as Appendix A to this report.

Recommendation 9 – Addressing the Need for P&C Actuaries

At the time of *The Crawford Report*, P&C actuaries represented 3% of the total membership of the CIA.[57] *The Crawford Report* states:

> The CIA's most pressing problem in expanding our scope is to find an adequate supply of casualty actuaries. There is a wide variety of professional issues which have been tackled on the life side but which have not been looked at on the casualty side as yet due to manpower problems (e.g., solvency standards). This is

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[56] *The Crawford Report*, December 1989, Section 3.
[57] *The Crawford Report*, Appendix I, Section D.

> crucial for the Institute since our proposed wording with respect to the Valuation Actuary in the forthcoming legislation does not distinguish between life and property and casualty companies. Our first priority should be to increase the number of casualty actuaries in Canada, increase the development of professional techniques and standards for these members, and try to encourage the P&C industry to use actuaries to an extent approaching their use in life companies.
>
> In calling for a broader role for property and casualty actuaries, the CIA must be prepared to support those of its members who carry out this role. This support extends from recruiting and manpower requirements for casualty actuaries, to the development of new techniques in such areas as valuation and solvency for property and casualty insurance, the establishment of appropriate standards of practice, and the education of students and members.[58]

Recommendation 12 – Focus on Current Issues in Government Relations

In the late 1980s the CIA was expanding its contacts with regulators and providing input to their activities and the development of new legislation. Specifically, *The Crawford Report* states that "expanded role of the valuation actuary may soon be recognized in legislation."[59] It was noted that actuarial certification of P&C reserves was planned in some provinces as well as federally and that more provinces were considering such requirements. At the time, Ontario was in the midst of a two-year overhaul of its insurance legislation and Prince Edward Island was expected to conduct a similar process. "All federal and provincial regulators are interested in the development of better early warning indicators for solvency problems. Solvency standards being developed by the Institute are of particular interest."[60]

It is interesting to note that some provinces (such as Alberta, British Columbia, Ontario, and Quebec) have developed insurance legislation with many of the same provisions of the *ICA*. However, the remaining provinces depend to a greater extent on directives from the superintendents rather than the provincial insurance acts.

Evolution of CIA Standards of Practice

Recommendations for Property-Casualty Insurance Company Financial Reporting

Among the first standards directed at P&C actuaries was *Recommendations for Property-Casualty Insurance Company Financial Reporting* (*Recommendations*), which was approved by CIA Council in November 1989 and effective January 1990. The *Recommendations* were set out in seven parts:

1. Introduction
2. Data
3. Considerations for claims liabilities

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[58] *The Crawford Report*, December 1989, Section 6.
[59] *The Crawford Report*, December 1989, Section 8.
[60] *The Crawford Report*, December 1989, Section 8.

4. Considerations for policy liabilities[61]
5. Methods and assumptions
6. The Actuary's report in published financial statements
7. The report by the Valuation Actuary in the government statement

While the *Recommendations* were officially repealed by the CIA on January 1, 2003, many of the subject areas are addressed in subsequent standards of practice. For example, Section 1530 of the current standards of practice addresses data:

> If the actuary reports without reservation with respect to data, then the data should be sufficient and reliable for the work. If sufficient and reliable data are unobtainable but the defect in them does not negate the usefulness of the result, then the actuary should report a usual opinion with reservation in respect of data. If defect in the obtainable data precludes a useful result, then the actuary should so report or make no report.[62]

And Section 1710 of the current standards of practice addresses assumptions:

> The needed assumptions for a calculation consist of model assumptions, data assumptions, and other assumptions. There is a model assumption for each of the matters that the actuary's model takes into account. Those matters should be sufficiently comprehensive for the model reasonably to represent reality. Data assumptions are the assumptions, if any, needed to relieve insufficiency or unreliability in the obtainable data. The other assumptions are the assumptions about the legal, economic, demographic, and social environment on which the model and data assumptions depend.[63]

Part 3 of the *Recommendations* is based in large part on the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* (*Statement of Principles*), which was adopted by the Board of Directors of the Casualty Actuarial Society (CAS), in May 1988. The considerations cited in the *Recommendations* include:[64]

— Homogeneity
— Credibility
— Emergence patterns
— Settlement patterns
— Development patterns
— Frequency and severity
— Reopened claims potential

[61] "Policy liabilities" was a defined term in *Recommendations* and represented "all the anticipated net costs to discharge the insurance company's obligations with respect to its insurance policies and reinsurance contracts except its claim liabilities." The definition of policy liabilities was changed in subsequent standards to include claim liabilities; and the term "premium liabilities" was adopted to represent the portion of policy liabilities which are not claim liabilities.

[62] Effective December 1, 2002, Revised February 5, 2009, http://www.actuaries.ca/members/publications/2009/SOP_e_General_1000_April09.pdf, accessed November 2010.

[63] Effective December 1, 2002, Revised February 5, 2009, http://www.actuaries.ca/members/publications/2009/SOP_e_General_1000_April09.pdf, accessed November 2010.

[64] http://www.actuaries.ca/members/publications/1990/9005e.pdf, accessed November 2010.

— Aggregate limits
— Collateral sources
— Reinsurance cession
— Pools and associations
— Operational changes
— Changes in loss distribution
— External influences
— Claim reserving techniques

Even though the *Recommendations* were repealed by the CIA, these considerations are still applicable to Canadian fully qualified actuaries working in P&C insurance. Some of the considerations were explicitly incorporated into subsequent standards of practice of the CIA. Furthermore, P&C actuaries typically attain Fellowship in the CAS in order to achieve their FCIA designation. Thus, as members of the CAS, P&C actuaries are required to consider the *Statement of Principles* in conducting analyses of policy liabilities.

Two significant requirements for P&C actuaries as set out in the *Recommendations* were the establishment of policy and claim liabilities on a present value basis and the provision for adverse deviation. In addressing the requirements for the present value of policy (i.e., premium) and claim liabilities, the *Recommendations* states:

> It is generally accepted actuarial practice to value liabilities as the present value of the payments which those liabilities represent. Pending better definition by the profession of an appropriate provision for adverse deviations, regulation in some jurisdictions requires the liabilities in government financial statements to be the sum, rather than the present value, of those payments. Where there is such a requirement, the recommendation in this section to establish a present value provision does not apply to the valuation of liabilities in government financial statements and because it is desirable that liabilities be reported the same way in both government and published financial statements, it likewise does not apply to the valuation of liabilities in published financial statements.[65]

And when discussing provision for adverse deviation, the *Recommendations* note:

> It is not possible to determine total liabilities with complete confidence. In evaluating liabilities, consideration should be given to the insurer's obligations to policyholders and claimants, as well as the inherent variability of conditions affecting future claim payments.
>
> Such consideration will result in the estimation of liabilities on a conservative basis. The degree of conservatism is a matter of actuarial judgment and depends upon the following factors:
>
> 1. The member's confidence in the expected development pattern;
> 2. The quality and depth of historical data forming the basis on which the reserve is evaluated;
> 3. The statistical fluctuations affecting ultimate claim frequency and severity;
> 4. The inflation rate (implicitly or explicitly) assumed in the valuation; and

[65] http://www.actuaries.ca/members/publications/1990/9005e.pdf, Section 5.04, accessed November 2010.

5. Conservatism of the interest rate used to determine the present value of policy and claim liabilities.

The member should not include as a part of the provision for adverse deviation, any provision for contingent events which have a remote probability of occurrence.

If policies and claims liabilities are not stated on a present value basis, then the member should consider the impact of discounting for interest in the computation of the Provision for Adverse Deviation.[66]

The final two sections of the *Recommendations*, which addressed the actuary's role in published financial statements and reporting of the valuation actuary, were replaced with updated standards of practice. Reporting is now addressed in Section 1800 of the standards of practice.

The *Recommendations* were expanded upon by Council in November 1997 with a new application section that became effective December 1, 1997. The revision to the *Recommendations* provided standards of practice for entities that are essentially the same as P&C insurance companies, in terms of the necessary valuation techniques, if not in terms of regulatory environment. According to new Section 1.09 Application, "these standards of practice apply to an actuary's work in the valuation of the policy (including claim) liabilities of a property-casualty insurance company unless the Workers' Compensation Standards apply."[67]

As of December 1997, the definition of P&C insurance company includes, but is not necessarily limited to: [68]

a. A federally or provincially regulated Canadian property-casualty insurance company,
b. A federally or provincially regulated branch of a foreign property-casualty insurance company,
c. A federally or provincially regulated property and casualty reciprocal insurance exchange,
d. A federal or provincial crown corporation or agency acting in a capacity similar to a property-casualty insurance company,
e. A company providing extended warranties, or
f. A professional indemnity fund or self-funding mechanism intended to provide protection against risks which could be insured by a property-casualty insurance company.

Appointed/Valuation Actuary Compliance Questionnaire for Property-Casualty Insurance Company Financial Reporting in Canada

From 1991 until 2001, AAs were required to file a compulsory questionnaire with the Institute on an annual basis. The purpose of the questionnaire was to respond to the CIA's commitment to monitoring members' compliance with the standards of practice. The Compliance Questionnaire was designed to cover the statutory valuation process of P&C insurers reporting in Canada and

[66] http://www.actuaries.ca/members/publications/1990/9005e.pdf, Section 5.05, accessed November 2010.
[67] http://www.actuaries.ca/members/publications/1997/9762e.pdf, accessed November 2010.
[68] http://www.actuaries.ca/members/publications/1997/9762e.pdf, accessed November 2010.

filed with applicable regulatory authorities. Individual responses were reviewed by members of the Property-Casualty Subcommittee of the Committee on Compliance and if deemed necessary, the Committee on Review or the Committee on Discipline.

Standards of Practice for the Appointed Actuary of an Insurance Company

The exposure draft of the *Standards of Practice for the Appointed Actuary of an Insurance Company* (*SOP for the AA*) was released by the CIA to membership in September 1991. Following minor modifications by the Committee to Develop the Role of the Valuation Actuary and the Committee on Standards of Practice, the final standard was approved by Council at the June 1992 meeting, and the standard became effective June 15, 1992.

This standard applied to AAs of all life and P&C insurance companies operating in Canada, domestic or foreign, in respect of the total business of domestic companies and the Canadian business of foreign companies. Transitional requirements were set out for AAs of provincially regulated companies and P&C insurance companies with respect to DCAT requirements.

The key requirements of the *SOP for the AA*, which are consistent with the requirements as set out in the *ICA*, included:[69]

— An actuary should accept and retain an appointment as AA only if the actuary has the necessary qualifications, experience, and knowledge. (Section 2.1)

— Prior to accepting an appointment as AA, an actuary should consult with the previous AA to determine whether there are any professional reasons not to accept the appointment. (Section 2.2)

— Prior to accepting an appointment as AA, an actuary should ensure that the board of directors, or such other body that makes the appointment, understands the duties of the AA. (Section 2.3)

— Prior to accepting an appointment as AA, an actuary should ensure that the board of directors, or such other body that makes the appointment, agrees to the requirements needed to fulfill the responsibilities of the AA, including but not limited to, timely access to all necessary and relevant management information, adequate resources and an appropriate venue for presenting the AA's annual report. (Section 2.4)

— If the preceding requirements cannot be satisfied, an actuary should not accept appointment as AA. If, after appointment, conditions change such that the requirements are no longer satisfied and, in the actuary's opinion, will not be satisfied in a timely fashion, the actuary should resign the appointment. (Section 2.5)

— An AA should arrange access to the records, accounts and documents necessary to provide an understanding of the company's obligations and the resources expected to be available to meet these obligations. (Section 3.1)

[69] All bullet points are taken from the italics requirements as set out in Sections 2 through 6 of the *SOP for the AA*, http://www.actuaries.ca/members/publications/1992/9240e.pdf, accessed November 2010.

— An AA should obtain information in respect of the company's existing obligations and resources, and for those expected in a future period, such period being dependent upon the company's business plans and the time over which the company can react to any situation requiring corrective action. (Section 3.2)

— An AA should identify the types of transactions or conditions which may have a material adverse effect on the financial condition of the company and establish a monitoring process so that the AA is aware of these transactions or conditions on a timely basis. (Section 4.1)

— If, in the opinion of an AA, a transaction or condition causes a material adverse effect on the company's financial condition and requires rectification, the AA should expeditiously report the situation in writing to the chief executive officer and the chief financial officer, or their appointed designates, if actuary of a domestic company, and to the chief agent, if actuary of a foreign company, and provide a deadline for corrective action. (Section 4.2)

— Where an AA makes a report under Section 4.2, the report shall be sent also to the board of directors. (Section 4.3)

— If suitable action is not taken by the date set, the AA should immediately notify the regulatory authority in writing. The notice should contain a summary of the concerns, a copy of the report, a description of events that have occurred since the writing of the report and any additional relevant information. (Section 4.4)

— At least once each year, an AA should make a report to the board of directors, or its designate, in regard to the current financial position and expected future financial condition of the company. (Section 5.1)

— An AA should take all reasonable steps to be continually apprised of what a current report in accordance with Section 5.1 would indicate. If such a report would indicate the need for corrective action to ensure a satisfactory financial condition, then a report should be made in accordance with Section 4. (Section 5.2)

— When complying with the statutory responsibility to value[70] the actuarial and other policy liabilities and such other matters as specified (in accordance with the requirements of regulatory authorities), an AA should make such valuations in accordance with the *Recommendations*. (Section 6.1)

— When complying with the statutory responsibility to make reports for the annual statement and published financial statements, an AA should make such reports as satisfy the applicable standards of practice of the Institute (particularly as set out in *The Appointed Actuary's Report for Insurance Company Published Financial Statements*). (Section 6.2)

[70] "Value is taken in its broad term, meaning to calculate (or review and validate a calculation made by others) in accordance with the standards of practice of the Canadian Institute of Actuaries in respect of data accuracy, setting assumptions, appropriateness of method, completeness, and materiality." (Source: *SOP of the AA*)

— An AA should give the AA's report for inclusion in the published financial statements only if such statements or accompanying documents contain a description of the respective roles of the AA and auditor. (Section 6.3)

Transitional requirements were set out in this standard which recognized that the role of the AA was not yet recognized in the legislation or regulations of all provinces. Thus, an AA was not required to comply with Sections 2.3, 2.4, 4.3, or 4.4.[71] It was also noted that the AA need not have access to information under Section 3.1 that is the prerogative of the board, though documentation and reporting to management, and possibly resignation, was required if the AA was unable to obtain access to adequate information.

It was also noted that the AA of a P&C company need not comply with the sections related to DCAT (Sections 5.1 and 5.2) until standards of practice were implemented, and in no event prior to calendar year 1993.

SOP of the AA was repealed effective January 1, 2003 when the Consolidated Standards of Practice – Practice Specific Standards for Insurers were adopted by the CIA.

The Appointed Actuary's Report for Insurance Company Financial Statements and *The Appointed Actuary's Report for Insurance Company Published Financial Statements*

The next standard applicable to actuaries working in the area of P&C insurance company financial reporting was *The Appointed Actuary's Report for Insurance Company Financial Statements* (*AA Report 1*), approved November 1992 and effective January 1 1992 (so that they applied to 1992 financial statements). The exception with respect to effective date was the report on financial condition which was deferred to the 1995 financial statements and was not allowed earlier.

AA Report 1 applied to an actuary's report in the published financial statements of an insurance company if those financial statements were in accordance with generally accepted accounting principles (GAAP). The standards of practice described:

— The contents of the actuary's report
— The situations where a standard report is appropriate
— The standard report
— The drafting of a report with reservation for unusual situations

Effective January 1, 1992, *AA Report 1* required that the actuary's report describe the valuation and presentation of the policy liabilities for the insurance company's balance sheet and income statement. Effective January 1, 1995, the standard was expanded to require that the actuary's report also describe the examination of the insurance company's financial condition.

AA Report 1 specified what policy liabilities in a P&C insurance company would typically consist of:

— Claim liabilities – those in connection with claims which have been incurred but not yet paid at the balance sheet date

[71] If not complying with Section 4.4, an AA was required to fully document any concerns and events that have occurred since writing the report required in Section 4.2.

— Other policy liabilities – those in connection with unearned premiums and with retrospective rating, such as adjustable premium and adjustable commission policies

AA Report 1 noted that a valuation of unearned premiums also included a determination of deferred policy acquisition expenses if they are accounted for as an asset in the balance sheet.

Discounting of claim liabilities was an important issue at the time of *AA Report 1*. On January 13, 1993, the CIA published a memorandum to all members of the CIA practicing in the P&C area with a correction to *AA Report 1* that addressed discounting. This memorandum noted that it is accepted actuarial practice to discount premium and claim liabilities. The memorandum then reported on the current GAAP and regulatory positions on discounting:[72]

> Currently, GAAP permits either discounted or undiscounted claim liabilities. The CICA Accounting Guideline for *Financial Reporting by Property and Casualty Insurance Companies* (April 1986) states in paragraph 12,
>
> > **Claim Provisions**
> >
> > Consensus has not been reached as to propriety of specifically recognizing the time value of money in establishing claim provisions. (...) When the time value of money is specifically taken into consideration, disclosure should be made as to the lines of business affected, the carrying amounts of liabilities that are presented at present value and the rates of interest that have been used to discount such liabilities.
>
> Currently, many regulators do not accept discounted premium or claim liabilities. OSFI states, in Section 4.2 of the *1992 Instructions for Actuarial Reports for Property and Casualty Business*,
>
> > With respect to policy and claim reserves in the actuarial reports, it should be noted that it is the current position of OSFI and Ontario **not to accept**, for purposes of the Annual Statement, reserves that have been discounted to reflect the time value of money.

The memorandum concludes with an interim revised standard of practice:[73]

> When premium or claim liabilities are not carried as a present value, the actuary's report should be amended as follows:
>
> [Standard scope paragraph]
>
> > In my opinion, the valuation is in accordance with the basis of accounting described in Note 1 and the financial statements fairly present its results.
>
> Note 1 of the financial statements should then disclose that premium and claim liabilities are carried on an undiscounted basis.

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[72] http://www.actuaries.ca/members/publications/1993/9306e.pdf, accessed November 2010.
[73] http://www.actuaries.ca/members/publications/1993/9306e.pdf, accessed November 2010.

AA Report 1 was repealed and replaced with a similar standard titled *The Appointed Actuary's Report for Insurance Company Published Financial Statements* (*AA Report 2*), which was approved in June 1997 and effective December 1997. The changes were primarily editorial in nature and not of a substantive nature. Specific sections that were changed include:

— Expand upon the description of the role of the actuary

— Change in wording in the actuary's report

— Limit the contents of the actuary's report to the valuation and presentation of the policy liabilities for the insurance company's balance sheet and income statement; thus, the examination of the insurance company's financial condition was eliminated from this particular standard of practice (DCAT addressed in a separate standard of practice)

— Specify that if the actuary determines policy liabilities on a discounted basis, investment income should include capital gains

The CIA also released an educational note in December 1997 with application guidance for *AA Report 2*.

Provision for Adverse Deviations Property & Casualty Insurance Companies

Council gave its final approval to the *Provision for Adverse Deviations Property & Casualty Insurance Companies* (*PfAD SOP)* at its November 1993 meeting. The *PfAD SOP* became effective for fiscal years ending after January 1, 1994. Council strongly recommended early implementation of this standard where liabilities were discounted to reflect the time value of money.

The *PfAD SOP* was applicable to all CIA members who were valuing the policy liabilities of a P&C insurance company operating in Canada, domestic or foreign. The goal of this standard was for actuaries to explicitly determine the provision for adverse deviations, which was commonly assumed to be equal to the amount of the present value discounting in undiscounted policy liabilities.

The *PfAD SOP* set out three major valuation variables in a P&C insurance company valuation: claims development, reinsurance recovery, and interest rate. "For each valuation variable, the member is to determine a margin required in excess of the expected value based on the considerations listed as they relate to the block of business and the company's particular situation."[74]

The *PfAD SOP* included definitions of key terms as well as detailed descriptions of the considerations related to the three variables (i.e., claims development, reinsurance recovery, and interest rate). The standard included examples of high margin situations and low margin situations and set out low and high margin factors.

This standard was repealed effective January 1, 2003 when the CIA adopted the consolidated standards of practice. Key information from the *PfAD SOP* has been integrated into the

[74] *PfAD SOP*, Section 2.

consolidated standards of practice as well as an educational note on margins for adverse deviation, which was released December 2009.

In 2009, there were three changes in the standard of practice related to margins for adverse deviation. Specifically,

— The high margin for claims development was increased from 15% to 20%

— The low margin for interest rate was decreased from 50 basis points to 25 basis points

— Explicit recognition of using stochastic methods to determine margins for adverse deviation was added to the standards

The following is an excerpt from the CIA Educational Note *Margins for Adverse Deviations for Property and Casualty Insurance*.

> The intent of the increase in the high margin is to make clearer to P&C actuaries that selection of 20% in times of great uncertainty is acceptable. For example, it may be appropriate for an actuary to select a margin of 20% for the following:
>
> > Automobile insurance in a specific province that is undergoing significant change due to tort reform or legal challenge to recently introduced tort reform,
> >
> > Introduction of a new line of business or operations in a new province for which there is limited relevant data from which to estimate policy liabilities,
> >
> > Significant change expected in future claims due to an increase in retentions and limited data for estimating the effect of such a change,
> >
> > Economic upheaval such as the financial crisis of the fall of 2008 and its effect on long-tail lines of insurance such as directors' and officers' liability.
>
> The above examples are only intended to be illustrative of potential situations for which the actuary may choose to select a claims development margin greater than 15%. However, it is important to recognize that the above situations may not always necessitate a claims development margin greater than 15% and the decision will be based on the actuary's assessment of the uncertainty around the mean estimate.
>
> The change in the high margin from 15% to 20% was not intended to shift all selected margins for P&C insurers. Many actuaries currently select between 10% and 15% for many of the longer-tail lines of P&C insurance. These claims development margins are selected based on a review of the numerous considerations underlying the actuary's estimate of claim liabilities and premium liabilities. It is not expected that these margins would change simply due to the increase in the high margin. However, if there has been a notable

change in the environment and in the actuary's assessment of the various considerations that influence the selection of the margin for adverse deviations, then a change may be justified.

Dynamic Capital Adequacy Testing

The work of the CIA on standards of practice for DCAT extends over many years. Two exposure drafts preceded the adoption of a final DCAT standard of practice by Council on December 14, 1998. The standard was effective for any DCAT work starting on January 1, 1999. With the publication of *Dynamic Capital Adequacy Testing* (*DCAT SOP*), the CIA finally had standards that addressed DCAT for both life and P&C insurance companies. Prior to December 1998, the previous dynamic solvency testing standard of practice only applied to life insurance companies. The *DCAT SOP* was applicable to an actuary's work examining future financial condition if asked for by the regulators. At the time, it was expected that the regulators would start requiring P&C insurers to have DCAT analyses completed. In the cover memorandum of the DCAT standard of practice, it was noted that the "CIA will notify the federal and provincial regulators that the DCAT standard is effective January 1, 1999."[75]

The purpose of DCAT was set out in Sections 15 to 17 of the *DCAT* SOP:

> Dynamic capital adequacy testing examines the effect of various plausible adverse scenarios on the insurer's forecasted capital adequacy. It is the actuary's primary tool for investigation of an insurer's financial condition.
>
> The purpose of dynamic capital adequacy testing is to identify
> plausible threats to satisfactory financial condition,
> actions which lessen the likelihood of those threats, and
> actions which would mitigate a threat if it materialized.
>
> Dynamic capital adequacy testing is defensive: it addresses threats to financial condition rather than the exploitation of opportunity.[76]

Some of the issues addressed in the *DCAT SOP* included:

— Requirements for the determination of a satisfactory financial condition
— Length of the forecast period
— Base scenario
— Plausible adverse scenarios
— Integrated scenarios
— Ripple effects
— Reporting
— Opinion

The CIA published an educational note on DCAT in January 1999, which was replaced in 2009 with a revised educational note. The *DCAT SOP* was repealed in 2003 when the consolidated standards of practice were adopted. DCAT is now addressed in a separate section (Section 2500) of the consolidated standards of practice.

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[75] *DCAT*, December 1998, cover note.
[76] http://www.actuaries.ca/members/publications/1998/9870e.pdf, accessed November 2010.

Peer/External Review

The subject of peer review was discussed for many years by the CIA leadership and membership. The following is from the September 1997 report titled *Appointed Actuary Peer Review* prepared by the CIA Working Group on Peer Review.

> The issue of peer review is one that has been debated among members for several years. In 1995, anticipation of changes to the compliance review process upon the adoption of consolidated standards of practice, and a specific desire to consider the implementation of peer review … Among the task force recommendations was one that:
>
> > Council encourage signing actuaries to have their work reviewed by another actuary member not involved with that work, and, as part of that encouragement, have guidelines developed for a process which the review would follow, and have ideas developed for ways providing access to a review for an actuary who needs help in finding someone to review his or her work.
>
> …
>
> The OSFI, too, in its comments on the task force report and in other communications, has urged the CIA to implement peer review without delay.[77]

It was six years later before changes in the CIA standards of practice were implemented. In response to the introduction of regulatory requirements for external review, also commonly referred to as peer review, the CIA revised Section 1640 of its standards of practice. "Section 1640 deals with how an actuary whose work is being reviewed and the reviewer treat each other. The main elements of the standard consider cooperation between the actuaries, reporting by the reviewer and dispute resolution."[78]

The revised Section 1640 became effective on September 1, 2003. An educational note, applicable to the reviews of an insurer's AA reports (i.e., report on the policy liabilities valuation and DCAT report), was released by the CIA as a supplement to the revisions in the standards of practice. In the covering memorandum with the revised Section 1640, it was noted that the standard of practice and the educational note did not apply to reviews conducted as part of a quality control process within an actuary's firm.

[77] http://www.actuaries.ca/members/publications/1997/9746e.pdf, accessed November 2010.
[78] http://www.actuaries.ca/members/publications/2003/203067e.pdf, accessed November 2010.

PART 8 – HISTORY OF P&C INSURER INSOLVENCY IN CANADA

Table 3 on the following page is based in part on Table 2 from *Predicting P&C Insurer Solvency in Canada* by Anne E. Kleffner and Ryan B. Lee,[79] and supplemented with information of the "cause of failure" supplied by PACICC. We reorganize the table from alphabetic order, as presented in the paper, to year wound up. This enables us to track the potential effect of changes in regulatory and actuarial professional standards with the number of P&C insurers who became insolvent or were liquidated.

Key dates of federal regulation include:

— 1992 – actuarial certification of the adequacy of outstanding claims and unearned premium provisions was required for all companies' 1992 annual statements

— 1999 – DCAT reports were required for P&C insurers

— 2003 – external review was required on a triennial basis for P&C companies

There does seem to be a reduction in the number of federal insolvencies after these key dates, in particular those related to reserving practices. Since the 1992 changes, only one federal insurer has failed due to inadequate reserving or rapid growth (and resulting in inadequate reserving).[80] However, since those changes, six provincial insurers failed as a result of inadequate reserving or rapid growth.

There has also been a strengthening of the role of the actuary for provincially regulated P&C insurers. This is primarily by request or directive of the regulator rather than the issuance of formal regulatory guidelines or changes in the insurance legislation.

[79] August 2006, Haskayne School of Business, University of Calgary.
[80] This federal insurer entered into run-off at the time of the changes and its reserve deficiency pre-dated the 1992 changes.

Involuntary Exits in Canada[81]			
Involuntary Exit	**Solvency Supervisory**	**Wound-up**	**Cause of Failure**
Ensign Insurance Company	Federal	1961	Deficient loss reserves
North American General Insurance Company	Federal	1966	Rapid growth
Wentworth Insurance Company	Federal	1966	Rapid growth
American Reserve Insurance Company	Federal	1979	Parent
Pitts Insurance Company	Federal	1981	Deficient loss reserves
Strathcona General Insurance Company	Federal	1981	Rapid growth
Cardinal Insurance Company	Federal	1982	Asset valuation
Canadian Great Lakes & Surety Company Ltd.	Ontario	1983	Alleged fraud
Northern Union Insurance Company	Manitoba	1983	Deficient loss reserves
Mennonite Mutual Hail Insurance Company	Saskatchewan	1984	Catastrophe loss
Ideal Mutual Insurance Company	Federal	1985	Parent
Northumberland Insurance Company	Federal	1985	Deficient loss reserves
Midland Insurance Company	Federal	1986	Parent
United General Insurance Company	Federal	1986	Reinsurance
Advocate General Insurance Company	Federal	1989	Deficient loss reserves
American Mutual Liability Insurance	Federal	1989	Parent
Century Insurance Company of Canada (The)	Federal	1989	Affiliate
Eaton Bay Insurance Company	Federal	1989	Deficient loss reserves
Ontario General Insurance Company	Ontario	1989	Rapid growth
Phoenix Assurance Company of Canada	Federal	1989	Asset valuation
National Employers Mutual General Insurance Association Ltd.	Federal	1990	Parent
Canadian Universal Insurance Company	Newfoundland	1991	Alleged fraud
Beothic General Insurance Company	Newfoundland	1993	Deficient loss reserves
English & American Insurance Company	Federal	1993	Parent
Hiland Insurance Company	Newfoundland	1994	Alleged fraud
Abstainers Insurance Company	Ontario	1995	Deficient loss reserves
Kansa General International Insurance Co. Ltd	Federal	1995	Parent
Maplex General Insurance	Ontario	1995	Rapid growth
Orion Insurance Company PLC	Federal	1995	Parent
GISCO la Compagnie d'assurance	Quebec	2000	Deficient loss reserves
Alta Surety Company	Federal	2001	Deficient loss reserves
Canadian Millers Mutual Insurance Company	Ontario	2001	Rapid growth
Reliance Insurance Company	Federal	2001	Parent
Markham General Insurance Company	Ontario	2002	Deficient loss reserves
Home Insurance Company	Federal	2003	Parent

[81] "Cause of Failure" are provided by PACICC.

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APPENDIX B – CIA GUIDING PRINCIPLES

1. In carrying on its activities and programs, the Institute holds the duty of the profession to the public above the needs of the profession and its members.

2. To ensure that services are provided by qualified individuals, the Institute maintains publicly visible programs and procedures for the attainment and maintenance of professional qualification by its members.

3. The Institute develops standards of professional practice and rules of professional conduct and, through its disciplinary process, ensures their compliance by its members.

4. The Institute promotes the development of a body of expert actuarial knowledge and practice relevant to Canadian social and economic needs. It encourages actuarial research and scholarly activity and the dissemination of the results among its members. It encourages the application of actuarial science and technique to new areas where these are relevant.

5. The Institute cooperates with governments and public bodies and makes timely and relevant contributions to public policy issues.

6. To assure a continuing supply of qualified professionals, the Institute encourages the recruitment and training of new actuaries.

7. The Institute serves the professional needs of all Canadian actuaries regardless of area of practice, language, or geographic region.

8. To assist its members in their professional activities, the Institute develops technical support including collection and analysis of statistical data, and the publication of actuarial handbooks and texts.

9. The Institute represents Canadian actuaries internationally and cooperates with other national actuarial bodies in areas of mutual interest.

10. The Institute provides opportunities for the professional development of its members.

APPENDIX C – OSFI *2010 MEMORANDUM FOR THE APPOINTED ACTUARY'S REPORT ON PROPERTY AND CASUALTY INSURANCE BUSINESS*

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