



Canadian  
Institute  
of Actuaries

Institut  
canadien  
des actuaires

## Draft Guidance

# Disclosure of Actuarial Matters – Disclosure Examples

Document 9-06

**ARCHIVED**

**This document was archived April 11, 2023**



---

***DRAFT GUIDANCE***

---

**DISCLOSURE OF ACTUARIAL MATTERS –  
DISCLOSURE EXAMPLES**

**ARCHIVED**

**COMMITTEE ON THE ROLE OF APPOINTED/VALUATION ACTUARY**

**JANUARY 1996**

*Ce projet de conseils est disponible en français*



## MEMORANDUM

**To:** Actuaries Practising in the Life and Property and Casualty Areas and Appointed Actuaries of Insurance Companies

**From:** Robert M. Smithen, Chairperson  
Committee on the Role of the Appointed/Valuation Actuary

**Date:** January 19, 1996

**Subject:** **Disclosure of Actuarial Matters In Life Insurance Company Financial Statements – Draft Guidance**

---

Enclosed are a variety of notes dealing with proposed disclosure of actuarial matters in life insurance company financial statements. A similar mailing is being sent to chartered accountants, regulators and the CLHIA for comment. The enclosures include the following title pieces:

Disclosure of Actuarial Matters – Outlines the background behind the proposals, the process for arriving at the recommendation, and where to send comments.

Disclosure of Actuarial Matters – Actuarial Comments – Comments from a subgroup of the Committee on the Role of the Appointed/Valuation Actuary related both as to how to interpret certain of the sections of the Draft Accounting Guideline and recommended additional disclosure in two areas.

Draft Accounting Guideline – Actuarial Liabilities of Life Insurance Enterprises – Disclosure. An interpretation of how existing standards of disclosure on measurement uncertainty and financial instruments, as contained in the CICA Handbook, would be applied by life insurance enterprises.

Two sets of sample disclosure, the first entitled “Illustrative Example, Actuarial Liabilities of Life Insurance Enterprises – Disclosure,” and the second entitled “Disclosure Examples.”

We believe the material is fairly easy to read and strongly encourage you to take the time to read it. Comments are encouraged – on actuarial issues, they should be sent to Rob Smithen at his *Yearbook* address no later than **April 30, 1996**. Due process will follow before any of the draft proposals become mandated.

RMS

## DISCLOSURE EXAMPLES

The following sample company has been used to illustrate possible disclosure.

### **SAMPLE COMPANY**

Operates in Canada and the U.S..

Life business in Canada is split 50%, 50% between participating life insurance and term insurance. Recent sales have been primarily term to 100 and the par product is uncompetitive. Some annuity business, but little new business. Most of the in-force annuity business is long-term payout annuities on retired lives written before 1990.

In the U.S., universal life is the major product with 80% of new life business in this category. There is a closed block of par business. Balance of new business is five-year term. The company writes short-term deferred annuities in the U.S. market. The company is trying to expand its sales of variable annuity products with little success.

Underwriting is good with mortality profits emerging, but lapses are a concern on term to 100.

ARCHIVED

## 1. NATURE AND COMPOSITION OF POLICY LIABILITIES

Policy liabilities represent the amounts which, together with estimated future premiums and investment income, will be sufficient to pay estimated future benefits, dividends, and expenses on policies in force. Policy liabilities are determined using generally accepted actuarial practices, according to standards established by the Canadian Institute of Actuaries.

The company is active in individual product lines (other than individual health) in Canada and the United States.

The composition of the company's policy liabilities is as follows:

	Canada		United States	
	1995	1994	1995	1994
	\$ millions	\$ millions	\$ millions	\$ millions
Par – Individual Life	1000	900	200	180
Non-par – Individual Life	200	120	700	600
– Annuity	500	510	600	400
<b>Total</b>	<b>1700</b>	<b>1530</b>	<b>1500</b>	<b>1180</b>

## 2. ASSUMPTIONS

In the computation of policy liabilities, "best estimate" assumptions covering the lifetime of the policies have been made for many variables including mortality/morbidity, investment returns, rates of policy termination, levels of operating expenses, inflation, policyholder dividends, and taxes.

The methods for arriving at the most important of these assumptions are outlined below.

### Mortality

For individual life mortality, the company carries out an annual mortality study by country as well as contributing to the Canadian intercompany study of the Canadian Institute of Actuaries. The company's assumption has been derived from a combination of its most recent five-year average experience and recent CIA industry experience.

For annuity mortality, the most recent intercompany experience table (CIA) has been projected forward 20 years to allow for continuing mortality improvement for the older age group.

Recent experience has been 3%-5% more favourable than expected in all lines of business.

### Investment Returns

The company maintains asset segments backing specific lines of business. The projected cash flow from these segments were combined with future reinvestment rates derived from the current economic outlook and the company's investment policy to determine expected rates of return on these assets for all future years.

Actual rates of return for 1995 were within 0.25% of the expected rates assumed last year. This is well within the margin for adverse deviations described below. Investment returns are expected to fall in Canada by 50 basis points in 1996, but to remain unchanged in the United States.

## Expenses

Policy maintenance expenses were derived from the company's internal costs allocation studies adjusted for productivity gains of 1.5% for each of the next five years. The impact of the productivity gains in 1996 is expected to be \$2 million. The company's new administration system, developed over the past two years, should ensure that these gains are realized.

## Lapses

Lapse assumptions have been modified to allow for decreased lapses on the company's level premium term insurance block of business. Recent experience showed that fewer policyholders were lapsing than had been anticipated. The new lapse assumptions are more stringent than the Canadian Institute of Actuaries' minimum standards for this class of policies, and allow for a further decrease in lapses in future years. The company views the assumption as conservative in light of current and projected experience.

## 3. PROVISION FOR ADVERSE DEVIATION (PAD)

The basic assumptions made in establishing actuarial reserves are best estimates for a range of possible outcomes. To recognize the uncertainty in establishing these best estimates, to allow for possible deterioration in experience and to provide greater comfort that the actuarial reserves are adequate to pay future benefits, actuaries are required to include a margin in each assumption. A range of allowable margins is prescribed by the Canadian Institute of Actuaries.

The company maintains margins near the middle of the allowable range. Lower margins could be justified in many circumstances, but the company has a desire to stress security in our balance sheet. As a result of the nonguaranteed nature of our business, the PAD for this class of policies is 50% of the level for other products. Because of the high level of uncertainty around inflation, the company uses a higher margin for expenses. In total, our margin increases our actuarial reserves by 5% (\$160 million).

The company has increased the margins in one of our key assumptions – lapses – because of a shortage of reliable information about emerging experience.

## 4. CHANGE IN POLICY LIABILITIES

	1995	1994
	\$ millions	\$ millions
Policy liability on Dec. 31, 1994 (93)	2730	2420
Restatements		
Changes in basis	30	0
Normal Changes a) New Business	320	200
b) In Force	120	110
Policy liability on Dec. 31, 1995 (94)	3200	2730

The company changed its actuarial reserves for life insurance products by \$30 million due to new lapse assumptions on term to 100 policies in Canada. The new reserves make conservative provisions for the impact of fewer lapses on this block of business.

## 5. ASSETS BACKING THE POLICY LIABILITIES

	Life Insurance		Annuities	Capital & Surplus	Total
	Par	Non-par			
	\$ millions	\$ millions	\$ millions	\$ millions	\$ millions
Bonds	800	750	800	50	2400
Mortgages	200	150	300		650
Equities	100			100	200
Real Estate	100			100	200
Other				50	50
<b>TOTAL</b>	1200	900	1100	300	3500

The company maintains assets adequate to support the policy liabilities as well as a strong capital position in excess of all regulatory capital requirements.

It is the investment policy of the company that these assets be chosen for their amount and cash flow characteristics to match the policy liability cash flows. Since it is the company's policy that these assets or ones with similar characteristics will be held until the expiry of the policy liabilities, any change in the market value of these assets will have little material impact on the financial position of the company.

The market value of assets backing the capital and surplus account is of interest in assessing the financial strength of the company. At the end of the year, the market value of surplus assets exceeded the book value by \$150 million.

### Interest Rate Risk

The company's financial position may be affected by its exposure to interest rate risk. Interest rate risk is the risk of economic losses or gains arising from the disinvestment or reinvestment of cash flows. If the assets supporting the liabilities do not match the timing and amount of the policy obligations, interest rate losses or gains may occur due to changing interest rates in the future.

To manage and control the interest rate risk, the company maintains an appropriate matching policy for each of its businesses.

For the annuity business, where the timing and amount of the benefit obligations can be readily determined, the matching of the asset and liability cash flows is controlled. Short-term positions are sometimes taken to reflect market opportunities.

In the event of a sudden drop in interest rates of 1%, the net income of the company would be decreased by \$18 million. On the other hand, in the event of a sudden jump in interest rates of 1%, the net income of the company would improve by \$14 million.

For the life insurance business, where the timing and amount of the benefit obligations can only be estimated, the assets are maintained with duration equal to that of the liabilities, and the company has little exposure to interest rate changes over the next 12 months.

## Credit Risk

The company has made provision in its balance sheet for credit losses for those assets which are used to support the policy liabilities. Provisions on assets which are currently impaired have been made partly through reduction in the value of the assets and partly through a provision in the policy liabilities. Provisions for losses on assets which will become impaired in future are included in the policy liabilities. The total provisions are shown in the following table:

	<b>1995</b>	<b>1994</b>
	\$ millions	\$ millions
In Assets	45	55
In Liabilities	30	29
<b>Total</b>	<b>75</b>	<b>84</b>

The total nonperforming assets of the company are \$150 million in 1995 (\$180 million in 1994).

The provision for credit losses on each currently impaired asset is reviewed quarterly and an external appraisal is conducted annually. The provision for credit losses on assets which will become impaired in future varies by type of asset and is based on a combination of company experience, industry experience and the economic outlook.

## Liquidity

It is important that any financial institution have access to cash to make benefit and expense payments as they come due. The company maintains a high level of liquid assets to ensure that any reasonably unforeseen cash demands can be readily met. The liquid assets exceed the liquidity needs of the liabilities by a wide margin as the table below illustrates:

<b>Liquid Assets</b>	<b>Book Value</b>	<b>Market Value</b>
	\$ millions	
Cash and Short-Term Notes	500	500
Other Ready Cashable Assets		
• Government Bonds	400	450
• Corporate Bonds	1500	1600
• Common/Preferred Shares	100	180
<b>Total</b>	<b>2000</b>	<b>2230</b>
Unused Bank Line of Credit	200	200
<b>Total</b>	<b>2700</b>	<b>2930</b>



Looking at liabilities:

Liability	Book Value	Liquidity Need
	\$ millions	\$ millions
Policies with no surrender charges	550	High
Other liabilities (bank loans, assets on deposit, etc.)	100	High
Policies with surrender charges	1450	Medium
Policies with surrender values which vary with underlying asset values	500	Low
Policies with no surrender values	600	Nil

## 6. EXPOSURE TO OTHER RISKS

The company evaluates its exposure to changes in the assumptions underlying the policy liabilities regularly.

The company has experienced three successive years of favourable claims results, but, should mortality deteriorate by 10%, the impact would be a modest 4% reduction in the company's surplus.

Twenty percent of the company's business comprises term to 100 products and the financial results of the company are sensitive to the level of lapses on this block of business. The recent strengthening of reserves should provide adequate margins against any future deterioration in experience.

## 7. CAPITAL ADEQUACY

The regulatory MCCR rules contain detailed instructions for determining the amount of capital that a life insurance company is required to maintain in respect of its business activities. Companies are required to maintain an MCCR ratio of at least 100%.

The company's MCCR ratio increased from 150% to 160% during 1995 as a result of changes in the company's asset mix. The company intends to maintain an MCCR ratio of at least 150% as part of its core business strategy.

## 8. REINSURANCE

Reinsurance has been used to reduce risk by limiting the company's exposure to a single claim for death or health benefits. All reinsurance is placed with companies having at least an A S&P rating.

The reduction in reserves as a result of reinsurance is shown below:

	1995	1994
	\$ millions	\$ millions
Whole Life Insurance	4.0	3.8
Term Insurance	1.8	0.4

The company reinsures individual life risks in excess of \$2 million to limit earnings volatility. It paid \$2.9 million in reinsurance premiums in 1995 (\$2.1 million in 1994).