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Actuary's Guide Regarding the Liability Report for Insurers of Persons

Actuary's Guide Regarding the Liability Report for Insurers of Persons

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Introduction

This Guide is intended for actuaries of Quebec chartered insurers of persons. Actuaries are persons¹ who were charged with their functions by the board of directors under sections 115 and 278 of the *Insurers Act*, CQLR, c. A-32.1 (the “Act”).

It sets out the requirements of the Autorité des marchés financiers (the “AMF”) for the content and presentation of the report required under section 128 of the Act (hereinafter referred to as the “Report”). The Guide does not limit in any way the information the Report may contain. The actuary should include all information—in addition to that required in this Guide—to assist in understanding the actuary’s work.

Although this guide deals primarily with the liabilities (or assets) of the insurer’s insurance contracts, it also contains other information deemed relevant by the AMF to fulfill its role as regulator. Indeed, contract liabilities are directly related to the insurer’s financial position and also serve as an input for capital adequacy requirements in insurance of persons (hereinafter referred to as “life and health insurance”). The content of the guide is therefore not strictly limited to the insurer’s IFRS 17 calculations.

As required under section 129 of the Act, the actuary must apply generally accepted actuarial standards. Consequently, the actuary must comply with accepted actuarial practice established by the Standards of Practice of the Canadian Institute of Actuaries (the “CIA”).

The AMF also expects the actuary to follow the guidance provided in the following CIA educational notes:

- "Guidance for the 20AA Valuation of *Insurance Contract* Liabilities of Life Insurers" Educational Note of the Committee on Life Insurance Financial Reporting (CLIFR);
- All educational notes related to the International Financial Reporting Standard "IFRS 17 *Insurance Contracts*";
- All other Educational Notes related to the actuary's valuation of liabilities.

Otherwise, the actuary must justify any deviations from the previous guidance material.

¹ In this Guide, the masculine gender has been used to simplify the text.

The AMF may make amendments, clarifications or requirements to the generally accepted actuarial standards. This guide does not contain any requirements that would override or limit accepted general practice in Canada.

The actuary's opinion relates to the insurer's consolidated business.

Some tables in the actuary's Report are intended, in particular, for reconciliation with the "LIFE returns²", either on a consolidated or non-consolidated basis. The title of the tables in the Excel file clearly indicates the basis requested. The other information required by this Guide, must pertain to the non-consolidated business only, unless otherwise indicated.

The AMF expects the valuation methods and assumptions used to be clearly justified. Among other things, the source of the assumptions must be clearly disclosed.

Accordingly, the actuary may be required to produce additional explanations where the annual financial returns or the actuary's Report do not allow the appropriateness of the methods and assumptions used to be gauged.

To that end and for the purpose of on-site examination, the actuary must collect and keep:

- The tests, studies and other analyses carried out by the actuary;
- The documents that could provide clear and complete justification of the choice of methods and assumptions used; and
- The control procedures for data, assumptions and calculations.

² "LIFE returns" refer to the following returns and related instructions: "Life Core Financial Statement Quarterly Return (LF1)", "Life Supervisory Quarterly Return (LF2)", "Life Supervisory Annual Supplement Return" and "Life Provincial Return".

Definitions

The actuary must consider the following definitions when preparing the actuary's Report and the tables in the Excel file required by the AMF:

- "**Insurance contract liabilities**" include the liabilities of reinsurance contracts issued and represents the net amount of insurance contract assets, as defined in the LIFE returns;
- "**Reinsurance contract held assets**" include insurance ceded or retroceded to reinsurers and represents the net amount of reinsurance contract held, as defined in the LIFE returns;
- "**Net contract liabilities**" mean insurance contract liabilities net of *reinsurance contract held assets*;
- "**Contracts**" mean *insurance contracts AND reinsurance contracts held*;
- "**Period**" means the current fiscal year.

Note that the AMF expects investment contracts with discretionary participation features measured in accordance with IFRS 17 to be included in *insurance contract liabilities*.

In addition, when the following terms defined in IFRS 17³ are used in this Guide and in the required tables, they have the same definitions in IFRS 17:

- "**Insurance contract**";
- "**Reinsurance contract**";
- "**Group of Contracts**";
- "**Portfolio of insurance contracts**" or "**portfolio**";
- "**Contractual service margin**" ("**CSM**");
- "**Risk adjustment for non-financial risk**";
- "**Fulfilment cash flows**" ("**FCF**");
- "**Liability for remaining coverage**" ("**LRC**") or "**Asset for remaining coverage**" ("**ARC**");
- "**Liability for incurred claims**" ("**LIC**") or "**Asset for incurred claims**" ("**AIC**").

³ These terms will be presented in italics in the Guide.

Excel file required by the AMF:

The actuary must complete and submit the "Supplementary tables.x/sx" file (the "Excel file") available under the "*Report on liabilities*" section of the AMF's website at the following address:

<https://lautorite.qc.ca/en/professionals/insurers/disclosures/insurance-of-persons-life-and-health>

The actuary must follow the instructions provided on the first worksheet of the Excel file. In particular, the tables in the Excel file required by the AMF must not be modified by adding rows or columns. The actuary must ensure to include in these tables all the information required by the Guide.

The tables required in this Guide refer to the Excel file. The tables may be modified in the Report, if necessary, **but not in the Excel file**. In particular, the insurer can add additional rows or columns and/or subtotals directly into the Report for certain tables. It can also add its own internally used classification.

Summary of tables

Here is the list of the tables in the Excel file required by the AMF that the actuary must include in the report in the appropriate sections:

Table	Title
2.1	<i>Insurance Contract and Reinsurance Contract</i> Held Liabilities (Assets) by portfolio and by type of contracts
2.2	Mapping of Portfolios
4.2.1.4	Expenses by Portfolio
4.2.2 a	Spot Discount Curves - Canadian Business
4.2.2 b	Interest Rate Sensitivity Testing
4.2.3	<i>Risk Adjustment for Non-Financial Risk</i> by portfolio
5	Liabilities for Investment Contracts
7.1 a	Experience Gains/Losses by Component
7.1 b	Experience Gains/Losses by Portfolio
7.2 a	Assumption Changes by Component
7.2 b	Assumption Changes by Portfolio
7.3 a	Finance Expenses (Income) by Variation Type
7.3 b	Finance Expenses (Income) by Portfolio
8 a	<i>Reinsurance Contracts</i> Held
8 b	New <i>Reinsurance Contracts</i> Held and Modifications to Existing Contracts
9.2.1 a to e	Guarantees of Variable <i>Insurance Contracts Relating to Segregated Funds</i>
9.2.2	Financial Guarantees Relating to Universal Life <i>Insurance Contracts</i>
9.2.3	Financial Guarantees Relating to Other Types of Contracts
A3.1	New Contract Issues
A4.1 a	Matching Level by Segment According to Duration
A4.1 b	Composition of Segments – Investment Items
A6.1	Contractually Adjustable Products
A6.2	Participating Account
A7.1	CARLI - Eligible Deposits
A72	CARLI - Credits for Participating Products and Contractually Adjustable Products
A8	Net Income Analysis

Format of Report

Table of contents

The Report must include a detailed table of contents and must follow the same order of sections as set out in this Guide. If the actuary deems it appropriate to add sections to the Report, they may be inserted after the prescribed appendices. Furthermore, the various sections must be identified and all pages must be numbered so that a reference can be made to the table of contents.

Contact person

The Report must provide the contact information for the contact person appointed by the actuary to answer disclosure questions relating to the Report. Such contact information must be clearly indicated on the first page of the Report and include the:

- Contact person's name;
- Company's name;
- Telephone number;
- E-mail address.

Outline of Report

The actuary must ensure that a clear and complete report, containing all the sections, subsections and appendices set out in this Guide, as well as all the tables required in the "Summary of tables". **All the sections, appendices and tables are required for monitoring purposes by the AMF.** Accordingly, even if a section does not apply to an insurer, it must still be included in the Report.

Smart PDF

The AMF expects the searchable PDF format to be adhered to, as indicated in the "E-Services – Disclosure Guide – Insurers" document available on the AMF website at the following address: <https://lautorite.qc.ca/en/professionals/insurers/disclosures/insurance-of-persons-life-and-health>.

Searchable PDFs are interactive PDFs. For example, the table of contents must contain clickable links to the various sections, and the file must contain bookmarks for ease of navigation. A scanned version will not be accepted.

Section 1 – Executive summary

This section of the Report describes the context that prevailed when the actuarial valuation of the net contract liabilities was performed.

In this section, the actuary must include the following:

- A brief presentation of the insurer:
 - An overview of the insurer’s structure;
 - Changes made to the structure;
 - The insurer's lines of business, etc.
- Recent years’ significant developments materially affecting the insurer’s net contract liabilities or results:
 - The introduction or termination of an important product or line of business;
 - The implementation or termination of a material *reinsurance contract*;
 - A portfolio transfer, partnership, merger, or acquisition;
 - A brief description of all material changes arising from the implementation of new accounting or actuarial standards, etc.
- A description of the material risks the insurer is facing:
 - Material risks identified in the insurer’s last Financial Condition Testing (“FCT”) report, ORSA, stress testing or contingency plan;
 - Any other risk deemed material by the insurer when monitoring sound and prudent management practices.⁴
- Material changes to methods, assumptions, data sources etc., and justification of those changes;
- Any other element required to assist in understanding the valuation of net contract liabilities, such as:
 - Material issues or concerns identified by the actuary and how they were resolved;
 - Any unusual situation identified in the course of the valuation, etc.;

⁴ According to the AMF's *Integrated Risk Management Guideline*:
https://lautorite.qc.ca/fileadmin/lautorite/reglementation/lignes-directrices-toutes-institutions/g_risk_management_final.pdf

- Changes to accounting choices and the justification of those changes when they have a material impact on present or future results (net income and/or comprehensive income).

Section 2 - Summary of insurance contract liabilities and reinsurance contract held assets

2.1 Insurance contract and reinsurance contract held liabilities (assets)

In this section of the Report, the actuary must present Table 2.1 in order to reproduce net consolidated insurance contract and reinsurance contract held liabilities (assets). These liabilities (assets) must represent the sum of the *LRC* and the *LIC*, as shown in the table.

The actuary must provide the information separately by country, by portfolio/subsidiary and by type of products. Estimates can be used to separate the CSM at this level of granularity.

The total liabilities for portfolios containing insurance contracts in Table 2.1 must equal the total insurance contract liabilities disclosed in the LIFE statements on page 20004, line 169, column 01, net of the total insurance contract assets on page 20002, line 170, column 01.

Similarly, the total assets of the portfolios containing reinsurance contracts held in Table 2.1 must equal the total assets of the reinsurance contracts held disclosed in the LIFE statements on page 20002, line 180, column 01, net of the total liabilities of the reinsurance contracts on page 20004, line 189, column 01. However, the total sign must be reversed because the asset amounts in table 2.1 are presented with a negative sign.

The actuary must also disclose the contractual service margin recognized for services provided or received and premiums received for insurance contracts or premiums paid for reinsurance contracts held during the period related to those contracts. The actuary must also disclose the loss component of onerous contracts.

The various *portfolios* must be described in section 4.1 of the Report.

In order to complete Table 2.1a, the actuary must consider the following:

- For subsidiary business, the required information must be presented following the non-consolidated business (enter "Subsidiary" in the "*Portfolio* or Subsidiary" column, and the name of the subsidiary in the "Type of products or Subsidiary Name " column);
- If the insurer does business outside of Canada, the information must be provided first for business issued in Canada, then for business issued in the United States and, lastly, for business issued in other countries.

In addition, for each *portfolio* in Table 2.1, the columns "Portfolio or Subsidiary" must include:

- A searchable PDF link to section 4.1 of the Report, where the description for the portfolio is set out.

2.2 Mapping of Portfolios

In this section of the Report, the actuary must present Tables 2.2 pertaining to the following information related to each combination of portfolio/product type.

- The country related to the *portfolio*;
- The *portfolio* of Table 2.1;
- The type of products in each of the portfolios according to Table 2.1;
- The line of business of the LIFE returns to which the portfolio belongs;
- The internal line of business;
- The type of contract (i.e., an insurance contract or a reinsurance contract held);
- Whether or not the portfolio/product type contains new contracts for the period;
- Whether or not it contains adjustable products;
- Whether or not it contains participating products;
- Whether the contracts include or not financial guarantees;
- The modeling used for contracts that includes financial guarantees;
- Whether or not it contains contracts with cash flows that vary based on the returns on any underlying financial items;
- Whether or not it contains contracts with investment/service components;
- The valuation method used to measure the *LRC/ARC*.

Section 3 – Responsibilities and verification of data and calculations

This section of the Report is divided into two parts. First, the actuary must summarize the responsibilities within the company in relation to the calculation of contract liabilities:

- A description of the responsibilities of the actuary in the valuation of net contract liabilities, including:
 - Its role regarding the assumptions and methods in general;
 - Its role regarding the establishment of the risk adjustment for non-financial risk;
 - Its role regarding the establishment of the interest rate curves;
- A general description of the internal responsibilities with regards to the calculation of net contract liabilities supervised by the actuary, which are the responsibility of the actuarial teams, accountants, investment teams, etc.

Subsequently, the actuary must disclose the procedures used to verify the data used in the valuation of net contract liabilities for both completeness and validity. In particular, the procedures must cover the inputs (including underlying financial items) used in the calculation of net contract liabilities.

The actuary must also summarize the process used to ensure that the data used and calculations, made to determine net contract liabilities reflect the provisions of the contracts and are in line with the actuarial and accounting assumptions and methods used.

The extent to which the actuary used and verified data and calculations produced by a third party must be specified.

Section 4 – Valuation of contracts

This section of the Report is divided into two separate parts, the details regarding the aggregation of contracts, and the determination of valuation assumptions and methods, including valuation systems.

As mentioned in the introduction to this Guide, the information required in this section must be presented on a non-consolidated basis, with the exception of certain tables for which the total must be presented on a consolidated basis.

Any approximations used must be covered in section 6 of the Report.

4.1 Details regarding contract aggregation

4.1.1 Determination of *portfolios*

The actuary must elaborate on how the *portfolios* are determined and explain how the allocation of various contracts in these *portfolios* is consistent with the concept of similar risks being managed together.

The actuary must describe and justify any changes made to the *portfolios* since the preceding period.

4.1.2 Detail of the Portfolios

In this section, the actuary does not have to repeat information that is common to several *portfolios*. Instead, the actuary may specify where the relevant information is located.

By *portfolio*, the actuary must disclose the following information:

- The main risks to which the portfolio/group of contracts is sensitive;
- Where the VFA is chosen, describe whether a risk mitigation technique is used, and how it is reflected; and Describe how a substantial share of the return from the fair value of the underlying items is achieved;
- Where the PAA is chosen to determine the *LRC* for contracts with a boundary of more than one year, the actuary must elaborate on how it meets the eligibility requirements of paragraph 53 (a)⁵ of IFRS 17;

⁵ That is, if on the date the group is created, the entity reasonably expects that the measurement of the liability for the remaining coverage resulting from this simplified method will not differ from significantly than that of applying the provisions of paragraphs 32 to 52 (i.e. to accurately assess)

- A description of each product contained, including:
 - The years in which the contracts were sold;
 - High-level information on contracts (average age; average face amount; number of contracts; contract amounts in force; etc.);
 - Contracts boundaries, and how they complies with paragraph 34 of the IFRS 17 standard;
 - A list of all the assumptions that were used (with reference to section 4.2 of the Guide):
 - The actuary must disclose and justify situations in which certain valuation assumptions for calculating *reinsurance contract* held assets differ from the valuation assumptions for calculating the liabilities of the associated *insurance contract*;
- For portfolios containing *insurance contracts*, the portfolios containing the *reinsurance contracts* held associated with them;
- For the portfolios containing *reinsurance contracts held*, the reinsurance contract(s) (with reference to section 8 of the Guide);
- For portfolios with future cash flows that vary based on financial underlying items, the actuary must disclose whether these cash flows have been separated from future cash flows that do not vary based on financial underlying items:
 - If they were separated, describe the method used;
 - If they were not separated, describe and justify the reasoning;
 - The actuary must give the reference to section 9.1 when these are evaluated using a stochastic approach. If a deterministic approach is used, the actuary will need to explain how his approach meets the criteria for a market-consistent valuation.
- Other relevant contract information, including whether the portfolio contains investment contracts with discretionary participation features measured under IFRS 17, whether the contracts are part of segregated funds on the LIFE returns, or whether certain components of the contracts have been separated or valued under other accounting standards (e.g., investment/service components);
- The actuary must disclose the valuation system used for the *portfolios and* whether the system was developed internally or whether it was provided by an external supplier. Any changes in valuation systems must be disclosed and the effects quantified. The actuary must disclose whether audits were performed whenever

changes were made to the valuation system. If no audit were performed, the actuary must disclose this;

- The approximations used (in reference to section 6 of the Guide).

4.2 Determination of deterministic assumptions and valuation methods

The actuary must justify the application of judgment at all stages of the net contract liability measurement process, including the estimation of future cash flows, the adjustment to reflect the time value of money, the *risk adjustment for non-financial risk* or for other purposes.

The actuary must clearly describe any instances where the judgment of a third party was used. In such instances, the actuary must disclose the identity of the third party and explain how the actuary ensured that the assumptions and methods used are suitably appropriate.

4.2.1 Estimates of future cash flows

For each assumption used in estimating future cash flows, the actuary must state the reasons why the actuary considers the assumptions to be appropriate while referring to any test, study (internal, industry or reinsurer) or other analyses supporting them. These references must be clearly described.

For this purpose, the actuary must complete the following table showing the schedule of the experience studies **for each assumption discussed in this section**.

Schedule of the experience study			
Name of the assumption			
Aggregation under study	The last quarter in which the study results were implemented in the liabilities	The quarter in which the next study results will be implemented in the liabilities	The frequency of the experience study

Justification must be provided if the date of the next experience study is unknown or if a scheduled experience study has been postponed. An explanation must be provided if there is no established process for updating the experience study, including the frequency at which an experience study is carried out.

The actuary must indicate the following for each assumption discussed in this section:

- The source of the data;

- Economic assumption data (tags linked to *Bloomberg*; *DataStream*; etc.);
- A justification of data relevance;
- How the data was processed;
- The credibility of the data;
- The results obtained;
- The link between the study results and the assumption used.

In particular, the actuary must describe and justify any trend reflected in the assumption used.

The actuary must also indicate how the actuary determined the assumptions for which the data sources are limited or where third party data was used.

The actuary must indicate whether the most recent studies published by the CIA were taken into account in determining the assumptions. If the actuary did not take them into account, justification must be provided.

The actuary must present the assumptions in the order in which they appear in sections 4.2.1.1 and following of this Guide.

The use of an implicit assumption must be disclosed.

4.2.1.1 Mortality

In this section, the explanations should focus on mortality assumptions related to mortality risk, i.e. for insurance products. Explanations for mortality assumptions related to longevity risk, for example annuity products⁶, should be included in section 4.2.1.2 Longevity.

The actuary must indicate the extent to which the assumptions selected are based on the insurer's own experience and/or the reinsurers' experience. In all cases, the actuary must justify the choices made based on the credibility applied to the insurer's experience, where applicable.

If changes are made to the published mortality tables, they must be explicitly disclosed. Where the mortality table used is not the most recent mortality table published by the CIA or originates from another source, the actuary must provide justification.

Where the insurer's experience is taken into account, the actuary he must provide a detailed description of the experience study and the main results thereof in the Report.

To that end, the actuary must provide a table reflecting this experience over the past few years, using actual to expected experience ratios. For all years indicated, the expected experience must be calculated using 100% of the mortality table used in the selection of the mortality assumption at the valuation date.

The table to be provided for the information used to determine the mortality experience ratio is as follows:

Mortality experience				
Year of experience	Number of deaths	(1) Gross actual deaths (in \$000)	(2) Expected deaths (in \$000)	Experience ratio (1)/(2)
...				
t-3				
t-2				
t-1				

⁶ For products that contain both mortality risk and longevity risk, the actuary may include these products in the Mortality or Longevity section depending on the predominant risk for these products.

t				
TOTAL				

The actuary must clearly explain the entire determination process for assumptions, from the experience ratios to the valuation assumptions used. All adjustments to the data, in particular to the experience ratios (e.g., for mortality improvement prior to the valuation date) must be described, quantified and justified by the actuary.

The actuary must provide clear and complete explanations as to the expected mortality for the different groups of insureds, such as men/women and smokers/non-smokers.

Also, when a single adjustment factor is applied to a mortality reference table for all ages, the actuary must state how the actuary ensured that the adjustment factor is relevant for older ages where the insurer has little experience for those ages. The actuary must also justify the selection of an identical adjustment factor for the select and ultimate periods, where applicable.

The actuary must explain how the mortality assumption was determined for products priced on a preferential basis or with guaranteed issue. For the various adjustment factors applied to the various preferential classes, the actuary must indicate how the selection effect disappears in the future so as to align the adjustment factors with those used for the other products. The actuary must also explain how the fact that the mortality for non-preferentially priced products may be influenced by preferentially priced products in the market was taken into account.

The actuary must indicate whether there are products that may be death-supported. The actuary must also clearly explain the treatment applied to the valuation of such products.

i) Future mortality improvement

The actuary must disclose the future mortality improvement assumption that is included in the mortality assumptions for each contract/product aggregation. The actuary's choice must be justified. The actuary must also indicate which factors were taken into account in establishing each contract/product aggregation.

ii) Credibility

The actuary must state how the credibility factor(s) applied to the insurer's experience were calculated, including the years of experience used to determine the number of

deaths. The actuary must also justify the use of an overall credibility factor for the insurer or a factor for each of the contract/product aggregation, as applicable. The actuary must indicate whether the normalized method was used and explain its application. If that method was not used, the actuary must justify the use of another method.

The following table must be provided:

Mortality credibility				
	Product sub-category			
	(1)	(2)	(3)	Etc.
Number of deaths				
Credibility factor				
Experience ratio				
Industry experience ratio				
Experience Ratio adjusted for credibility				
Assumption chosen (t)				
Assumption chosen (t-1)				

iii) Changes made to mortality rates

The actuary must discuss in detail any changes made to mortality rates and disclose the following:

- The impact of selective lapses on mortality, particularly for renewable term insurance;
- The adjustment factors applied to the various preferential classes (as mentioned above);
- The mortality improvement (as mentioned above);
- Mortality for multiple life *insurance contracts*;
- Any other items affected by or influencing how the assumption was determined.

4.2.1.2 Longevity

The explanations should focus on mortality assumptions related to longevity risk.

The specifications in section 4.2.1.1 apply to this section.

4.2.1.3 Morbidity

Explanations must be provided for incidence rates and recovery (termination) rates with respect to morbidity risk.

The actuary must indicate the extent to which the assumptions used are based on the insurer's own experience and/or industry experience and/or reinsurers' experience. In all cases, the actuary's choices must be justified, particularly by the credibility applied to the insurer's experience, where applicable.

Any changes to published contingency tables must be explicitly disclosed. The actuary must also justify the use of a contingency table that is not a recent table published by the industry, the CIA or the Society of Actuaries ("SOA") (e.g., when the 2011 CIA table for Quebec and non-Quebec group insurance recovery rates is not used) or when it originates from another source.

Where the insurer's experience is taken into account, the actuary must provide a detailed description of the experience study and the main results thereof in the Report.

For this purpose, the actuary must provide a table reflecting such experience over the past several years, using "actual to expected" experience ratios. For all the years indicated, the expected experience must be calculated using 100% of the contingency table used in the selection of morbidity assumption as at the valuation date.

The table must indicate whether the data were collected using the amount of insurance or the number of persons on disability.

Specifically, **for recovery rates** (e.g., for waivers of premiums and long-term disability benefits in group insurance), the actuary must present the following table for each contract/product aggregation used in the study.

Morbidity experience and assumptions used						
Recovery rate						
Duration of disability (or attained age)	Years of experience 20XX-20YY				% change based on Name of contingency table	
	Actual termination	Expected termination	Experience ratio (%)	Credibility (%)	Assumption used (T) (%)	Assumption used (T-1) (%)
<1 an						
1 an						
2 ans						
3 ans						
4 ans						
5 ans						
6-10 ans						
10+ ans						

And, specifically for individual insurance **incidence rates** (e.g., for critical illness, and salary insurance products), the actuary must provide a standard table that includes the following information:

- The actual number of incidences;
- The credibility factor;
- The actual to expected experience ratio;
- Industry or reinsurer experience;
- The experience ratio calculated using credibility;
- The assumption selected for the period (t);
- The assumption selected for the previous period (t-1).

The actuary must clearly explain the entire assumption determination process, from the experience ratios to the valuation assumptions selected. All adjustments to the data, including experience ratios (e.g., to reflect morbidity improvement trend prior to the valuation date), must be described and quantified by the actuary.

The actuary must provide accurate and complete explanations regarding the expected morbidity for the various groups of insureds, notably based on gender, durations of disability, attained ages (in particular for the ultimate disability recovery rates), Quebec/non-Quebec insureds, and based on whether or not the definition of disability

changes (e.g., for groups whose definition of disability changes from "regular or own occupation" to "any occupation" after a certain disability period).

i) Future improvement trend in morbidity

The actuary must disclose whether the morbidity assumptions include a future morbidity improvement trend. The rationale for the choices made by the actuary must be provided.

ii) Credibility

The actuary must indicate how the credibility factor or factors applied to the insurer's experience was or were calculated and for each factor, specify the following:

- The group of insureds used (all or a subset of insureds);
- The basis used for calculating the factor (expected or actual disabilities);
- The years of experience used.

iii) Changes made to morbidity rates

The actuary must state in detail any changes made to morbidity rates and disclose the following:

- The possibility of anti-selection by insureds;
- The future morbidity improvement trend (as mentioned above);
- Any other item affected by or influencing how the assumption was determined.

4.2.1.3 Expenses

Expense assumptions must be determined based on an experience study of the insurer. A detailed description of the study and its main findings must be included in the Report.

In particular, the actuary must describe and justify:

- The process used to collect the data required for the experience study (meetings with managers, surveys, etc.);
- The method used to allocate expenses, in particular the method used to allocate expenses between directly attributable and non-attributable expenses, and to allocate expenses between each *portfolio* and *group of contracts*. The actuary must justify any change in method compared to the previous study. If the insurer does not allocate non-attributable expenses by portfolio, the actuary should describe the approximation used;
- The method used to allocate expenses in Table 4.1.2.3. The actuary must justify any change from the previous study;
- The treatment of directly attributable acquisition expenses incurred up to the effective date of the contracts are in-force, as well as the recovery tests;
- The manner in which directly attributable maintenance and acquisition expenses are allocated (by contract, per \$1,000 of in-force business as a percentage of the premium or any other allocation method), as well as any changes in methodology relative to the previous study;
- A table showing the directly attributable unit expenses over the past two periods (per \$1,000 of in-force business; per paid premium contract; per paid-up contract; per rider; etc.).

The actuary must clearly justify any directly attributable unit expense assumptions that reflect a decrease in expenses, which may be related to an increase in productivity or a reduction in expected expenses.

To justify, in particular, the adequacy of the directly attributable expense assumptions, the actuary must include Table 4.2.1.4, the total of which is to be on a consolidated basis.

In these tables, **total expenses should equal the total of the insurer's consolidated general expenses, as well as expenses recognized in insurance service expenses and other operating expenses.**

On the basis of Table 4.2.1.4a, the following must be explained and justified by the actuary:

- “Excluded from directly attributable expenses” are expenses excluded from directly attributable expenses and/or from the estimates of future cash flows as per paragraphs B66 (d)⁷ and (e)⁸ of the IFRS 17 standard. Note that these expenses must not be included in columns 21 and 23 for non-attributable acquisition expenses and non-attributable maintenance expenses;
- Where the ratio of actual total expenses to total expected expenses (column 57 of Table 4.2.1.3a) is less than 95 % or greater than 105 %.

In addition, the actuary must set out a table showing the actual and projected directly attributable unit expenses for the past two periods, and the assumption as at December 31, 20AA, including the number of units and total directly attributable expenses. Any significant changes in this table, including a decrease in total expected directly attributable expenses, must be explained by the actuary.

i) Inflation

The actuary must describe and justify the “directly attributable expenses” inflation assumptions used in the projection of future cash flows.

ii) Premium taxes

The actuary’s explanation must address the treatment of applicable premium taxes. The actuary must disclose the “premium taxes” assumptions used to determine net contract liabilities.

iii) Investment income tax

The actuary must address the treatment of the applicable Part XII.3 Tax Return - Tax on Investment Income of Life Insurers (hereinafter referred to as “investment income tax” or “IIT”). The actuary must disclose the IIT assumptions used to determine net contract liabilities.

⁷ Cash flows relating to costs that cannot be directly attributed to the *portfolio of insurance contracts* that contains the contract, such as some product development and training costs. Such costs are recognized in profit or loss when incurred.

⁸ Cash flows that arise from abnormal amounts of wasted labour or other resources that are used to fulfil the contract. Such costs are recognized in profit or loss when incurred.

4.2.1.5 Lapses and Partial Withdrawals

The actuary must indicate the extent to which the assumptions chosen are based on the insurer's own experience and/or industry experience and/or reinsurers' experience. In all cases, the actuary must justify the choices made, including the credibility applied to the insurer's experience, where applicable.

When the insurer's experience is taken into account, the actuary must provide a detailed description of the experience study and the key findings that arose from it. To that end, the actuary must provide summary tables of the key findings of the study to support the selected assumptions.

In particular, the actuary must describe and justify the lapse rates applied to lapse-supported products, such as universal life with level cost of insurance products and individual T100 life insurance products with no cash value. Where the insurer's experience cannot be used for these types of products, the actuary must justify any use of ultimate (expected) lapse rates higher than those of the CIA's most recent studies.

The additional and selective lapse rates or renewable term insurance must also be described and justified.

In addition, the dynamic lapse and partial withdrawal assumptions for products where lapses or partial withdrawals vary with the performance of underlying financial items or external factors would also be explained in detail in this section of the Report.

4.2.1.6 Other assumptions and provisions

i) Other assumptions

The actuary must describe and justify the other deterministic assumptions used to determine net contract liabilities, including:

- Deterministic economic assumptions (risk-free interest rate, bond yields, equity returns, inflation rates (excluding the expense inflation rate which must be set out in section 4.2.1.4i) of the Report) , exchange rates, implied volatility, etc.) and their data tags (*Bloomberg; DataStream; etc.*), when used;
- Projected dividends for participating insurance products (for stochastic modeling, see section 9.1.3 of the Guide), including the way in which the period between the deterioration in experience and the reduction in dividends was taken into account;
- Premiums, benefits, future deposits, fund transfers, cash values or other components of contractually adjustable products or universal life insurance contracts (for stochastic modeling, see sections 9.1.2 and 9.1.3 of the Guide);
- Future deposits, payout options, fund transfers, guarantee resets or other items related to variable insurance contract guarantees (for stochastic modeling, see section 9.1.1 of the Guide);
- Integration with public plans (QPP/PPP);
- Remuneration paid to representatives;
- Advances on contracts/future contracts;
- Risk of non-performance from issuers of reinsurance contract held;
- Any other information deemed relevant by the actuary.

Stochastic economic assumptions are to be detailed in section 9.1 of the Report.

ii) Other provisions

The actuary must describe the other provisions reflected in net contract liabilities, including but not limited to:

- Manual adjustment reserves that are the result of the absence, or the inadequacies, of a valuation system;
- A bulk reserve to cover potential data problems;
- Liabilities held to cover cyclical fluctuations;
- A manual adjustment to offset experience fluctuations.

The actuary must describe the other provisions and state how they have been allocated within the *portfolios* and how they will be accounted for in the future.

4.2.2 Adjustment to reflect the time value of money

An entity must adjust the estimates of future cash flows to reflect the time value of money and the financial risks related to those cash flows, to the extent that the financial risks are not included in the estimates of cash flows, as set out in paragraph 36 of IFRS 17.

The actuary must describe and justify the approaches/methods and assumptions used to determine all discount curves developed (including for non-Canadian business) to adjust estimates of future cash flows to reflect the above-mentioned risks.

The actuary must provide the following information depending on the approach used:

Bottom-up approach :

- Describe the approach used, as well as the source of information and observable market data points, to construct the risk-free discount rate curve for the observable period;
- Justify the last observable market data point;
- Describe the interpolation between observable market data points;
- Describe and justify the methodology used to construct the risk-free rate curve beyond the observable period, including (but not limited to):
 - The value of the ultimate risk-free rate, and whether it is a forward or spot rate;
 - The year in which the ultimate risk-free rate is reached;
 - The interpolation method between the last observable rate and the ultimate risk-free rate;
 - The method of extrapolation beyond the ultimate risk-free rate;
- The liquidity premium to determine discount rates:
 - Describe and justify the level aggregation at which the level or levels of liquidity was or where determined (by group, product, line of business, portfolio, entity, etc.);
 - The level or various levels of liquidity premiums used. If the insurer has defined multiple levels of liquidity, the liquidity hierarchy (from least liquid to most liquid) must be disclosed;
 - The list of groups of contracts/*portfolios* for each level of liquidity used;
 - Justify the choice of level of liquidity in relation to the list of groups of contracts /*portfolios*. The AMF, as a minimum, the criteria of exit value, inherent value

and exit cost to be considered, as defined in section 3 of the CIA Educational Note "IFRS 17 Discount Rates for Life and Health Insurance Contracts";

- Describe and justify the approach used (either the hybrid approach or the market-based approach) to develop the liquidity premium in the observable period;
- Describe the interpolation between observable points for the period;
- If the liquidity premium is developed using a “top-down” analysis (as described in section 4.3 of CIA Educational note “IFRS 17 Discount Rates for Life and Health Insurance Contracts”, referred to as the hybrid approach), explain how the factor “r” (applied to the asset reference portfolio spread over the risk-free rate) and the constant (adjustment to reflect the difference between the liquidity characteristics of the insurance contract and the assets in the reference portfolio (asset spread)) are calculated and describe the asset reference portfolio (with reference to appendix 4 of the Guide);
- Describe and justify the approach used to develop the premium beyond the observable period, including (but not limited to):
 - The value of the ultimate liquidity premium and whether it applies to the spot or forward rate(s);
 - The year when the ultimate liquidity premium is reached;
 - The interpolation method between the last observable liquidity premium and the ultimate liquidity premium; and
 - The extrapolation method beyond the ultimate liquidity premium.

Top-down approach :

- Describe the asset reference portfolio(s) (with reference to section 10 of the Guide) and justify the choice of those portfolios;
- Describe and justify the methodology used for all adjustments made to the yield curve of the asset reference portfolio(s) to eliminate risks not applicable to *insurance contracts* (i.e. credit, market risks, etc.), providing details by asset type:
 - Bonds;
 - Equity;
 - Real estate;
 - Other non-fixed income assets (please specify);

- Other (please specify).

Reference curves for future cash flows that do not vary based on the returns on any financial underlying financial items (Canadian business only):

The AMF expects the actuary to compare the discount curves to the liquid and illiquid reference curves posted on the Fiera capital website. Where the actuary has defined a level or levels of liquidity between the liquid and illiquid categories, resulting in more than two discount curves, the actuary would use judgment to derive the reference curve or curves and explain the methodology in this section.

For both the observable and unobservable period, the actuary must describe and justify any differences between the insurer's discount curve and the reference curve.

The actuary must include Table and Chart 4.2.2 a, presenting the **spot** discount curves for Canadian business and the present value of the estimate of future cash flows for the observable period and the unobservable period derived with these curves.

When the discounted value of the estimates of future cash flows calculated using the parameters of the entity's discount curves beyond the observable period is **lower** than the value obtained using the parameters of the reference curves beyond the observable period, the actuary must justify the result.

Interest rate sensitivity testing

The actuary must include Table 4.2.2b, the total of which is on a consolidated basis, to disclose the net contracts liabilities excluding the CSM, by portfolio as per Table 2.1 using the following scenarios:

1. A 50 bps decrease in the interest rates for the observable period;
2. A 50 bps decrease in the ultimate interest rate for the non-observable period;
3. A flat 50 bps decrease from the discount curve
4. A 50 bps increase in the interest rates for the observable period;
5. A 50 bps increase in the ultimate interest rate for the non-observable period;
6. A flat 50 bps increase to the discount curve.

For the tests 1, 2, 4 and 5 above, the actuary must also consider the impact on the interpolation in both the observable and the non-observable period. Also, the actuary can use approximations if their impact is not significant when compared to the actual results. The actuary must explain and justify the reliability of the approximations used.

Then, an additional test consists in:

7. Replace all the interest curves with the CIA accounting discount rate curve ([CIA Accounting Curve](#)) as of December 31, 20YY used in the context of the accounting valuation of pension plans. The effective annual spot rates beyond the observable period must be equal to the rate at the 30-year term.

Finally, the actuary must perform the following additional tests if there are groups of contracts valued stochastically:

8. An absolute increase of 10% across the implied volatility curve in risk-neutral models.

In Table 4.2.2b, the net contract liabilities for test 8 must also include the non-stochastically valued groups of contracts, as the impact is calculated in terms of the insurer's total net contracts liabilities of the insurer.

For all tests, the actuary must consider both the discounting and the projections of cash flows. In particular, the actuary must reflect the effects of these scenarios in the projections, such as on participating product dividends/bonuses (including the way in which the period between the deterioration in experience and the reduction in dividends was taken into account, as required in section 4.2.1.5 of the Guide), contractually adjustable products, inflation rates, financial guarantees, taxes on investment income and adjustments made for future cash flows that vary based on the yields of underlying financial items.

The actuary would also discuss how the change in interest rate and volatility impact the risk adjustment, and how much of this change would flow through the net insurance financial result.

4.2.3 Risk adjustment for non-financial risks

The actuary must describe and justify any adjustments made to the estimate of the present value of the future cash flows to reflect the compensation that the entity requires for bearing the uncertainty about the amount and timing of the cash flows that arises from non-financial risk, as provided for in paragraph 37 of IFRS 17.

The actuary must describe and justify the method(s)/technique(s) used (quantile method such as confidence level or conditional tail expectation (“CTE”), cost of capital techniques, direct addition of margins to assumptions or scenario modelling, testing of extreme scenarios, etc.), including the confidence level used in determining the *risk adjustment for non-financial risk*. If a technique other than a quantile method is used, the actuary must disclose how the confidence level of the *risk adjustment for non-financial risk* was calculated.

Guidance on quantifying the confidence level is available in section 7 of the CIA Educational Note “*IFRS 17 Risk Adjustment for Non-Financial Risk for Life and Health Insurance Contracts*”. Regarding the confidence level, the actuary must discuss:

- The confidence level(s) that applies for the calculation of the gross risk adjustment and risk adjustment for reinsurance held;
- The granularity chosen for presentation purposes, when more granular than the entity level.

In connection with the method/technique used to determine the risk adjustment for non-financial risk, the actuary must explain:

- How the actuary ensured that the potential compensation for bearing the risk appropriately captures the nature of the uncertainty, the materiality of the uncertainty, and the structure of the underlying modelling available, particularly for qualitative and unknown risks;
- How the insurer's risk aversion has been assessed and incorporated in considering the compensation for bearing the risk, including how risk aversion interacts with variability and uncertainty in the determination of the *risk adjustment for non-financial risk* (if necessary, the actuary may refer to the insurer's risk management policy, and the insurer's risk appetite and tolerance statement);

- How the five criteria described in paragraph B91⁹ of IFRS 17 were met;
- What allowance was made for infrequent and atypical events in the tail of the distribution of the outcomes used or, where such events are not represented, how they were modelled (if applicable);
- How allowance was made for the impact of reinsurance held and the effect of other risk transfer or mitigation mechanisms (including any uncertainty in relation to recoverability of ceded amounts), if any;
- The insurer's net risk profile and how this is reflected in the difference between the gross risk adjustment and the risk adjustment for reinsurance held;
- The level of aggregation at which the *risk adjustment for non-financial risk* is determined. Whether it is determined at a higher or lower level than the *portfolio/product* type, the actuary must describe and justify the method for allocating the adjustment based on the level of granularity chosen;
- If the actuary chooses to reflect risk diversification in the *risk adjustment for non-financial risk*, the actuary must describe and justify the level of diversification benefit that the entity includes when determining the compensation for the uncertainty of cash flows arising from non-financial risk, as required under paragraph B88(a) of IFRS 17, including (but not limited to):
 - The technique used;
 - How the determination of the compensation is based on the gross and/or the net risk taking into account the reinsurance held;
 - The correlation matrix(es) or diversification factor(s), if used;
 - Diversification between entities for the disclosure of compensation at the group and subsidiary level, where applicable.

⁹ IFRS 17 does not specify the estimation technique(s) used to determine the *risk adjustment for non-financial risk*. However, to reflect the entity's required compensation for bearing the non-financial risk, the *risk adjustment for non-financial risk* must have the following characteristics: (a) risks with low frequency and high severity will result in higher *risk adjustments for non-financial risk* than risks with high frequency and low severity; (b) for similar risks, contracts with a longer duration will result in higher *risk adjustments for non-financial risk* than contracts with a shorter duration; (c) risks with a wider probability distribution will result in higher *risk adjustments for non-financial risk* than risks with a narrower distribution; (d) the less that is known about the current estimate and its trend, the higher will be the *risk adjustment for non-financial risk*; and (e) to the extent that emerging experience reduces uncertainty about the amount and timing of cash flows, *risk adjustments for non-financial risk* will decrease and vice versa.

The actuary must also describe and justify the discount rates used, if they differ from those used in estimating the present value of future cash flows, and for the rates used to develop the *risk adjustment for non-financial risk* over time, if applicable.

In this section of the report, the actuary must present the Table 4.2.3 summarising the risk adjustment for non-financial risk by portfolio. The total is on a consolidated basis. If the actuary calculates the *risk adjustment for non-financial risk* by directly applying margins to the assumptions, the actuary must present a breakdown of the amount according the risk categories (mortality/longevity; mortality improvement; morbidity; etc.). If the actuary uses a cost of capital technique, or at different confidence levels, the actuary must use the “Other” column to present the amounts. The diversification column must be used, provided it is explicit.

The actuary must explain significant changes in the amount of the risk adjustment for non-financial risk by portfolio since the last actuary’s report.

4.2.4 Contractual Service Margin

The insurer must measure the *CSM* on initial recognition of the *group of contracts*, as required under paragraph 38 of IFRS 17.

For a *group of contracts*, the actuary must describe and justify:

- How the interest rate was determined for *CSM* roll forward year after year;
- The method of accounting for the *CSM* in net income to represent the services provided to the group during the period, including, the various coverage units used;
- The discount rates used, where the actuary chooses to reflect the time value of money in the calculation of the coverage units for the group. Where the actuary chooses not to reflect it, justification must be provided.

Section 5 - Liabilities for Investment Contracts

In this section of the Report, the actuary must complete Table 5 by providing a breakdown of the liabilities for investment contracts by type of contract. The amounts must match those reported on page 20004 of the LIFE statements.

The actuary must provide a short description of the contract valuation.

Any use of actuarial assumptions or methods in calculating these liabilities must be disclosed and justified.

Section 6 – Materiality standard and approximations

In this section of the Report, the actuary must discuss the materiality standard (also referred in this section as the “standard”), and approximations used.

i) **Materiality Standard**

The actuary must provide details regarding the materiality standard used and describe the procedures followed to determine the standard. Accordingly, the actuary must include the following:

- The formulas used to determine the standard;
- The amounts of the standard;
- The conclusions of the interview with the independent auditor regarding the agreement with respect to the standard;
- The conclusions of the interview with the independent auditor regarding the application of the standard for the measurement of net contract liabilities;
- Disclosure and justification of the use of a standard for the valuation of net contract liabilities that is different from the one used by the independent auditor for the financial statements;
- Justifications for the use of multiple standards;
- Any changes to the materiality standard relative to the previous period; and
- Any other item deemed relevant.

ii) **Approximations**

The use of approximations must be justified. As with any approximation, the result of applying an approximate method must not differ materially from the result of applying an exact method.

The actuary must make reference to the methods and assumptions described in the other sections of the Report for which approximations were used. The actuary must indicate how it was verified that the difference between the result of applying the approximate methods and the result of applying the exact methods are below the materiality standard. The actuary must justify the appropriateness of using the approximation depending on the circumstances.

Section 7 - Change in net contract liabilities

7.1 Summary of experience gains and losses from insurance service

In this section of the Report, the actuary must quantify the change in net liabilities related to experience gains and losses for current service provided in the period, for past service provided in prior periods and for future service yet to be provided, including the change in the net liability for incurred claims measured under the premium allocation method.

For this purpose, the actuary must present Tables 7.1 a and 7.1 b for all contracts. The total is on a consolidated basis. The information in Table 7.1 a should be provided by type of assumption and the information in table 7.1 b should be provided for each of the portfolios as per Table 2.1, even when the change in net contract liabilities for a portfolio is below materiality standard. For subsidiary business, only the aggregate total for all assumption types and all portfolios should be presented.

In Tables 7.1 a and 7.1 b, the change in net liabilities should be broken down into liability components. In addition, the actuary should disclose the amount of the change in net liabilities that has been reflected in the insurance service result (i.e., the impact of changes that do not adjust the CSM) and in the net investment result (i.e., the impact due to the difference between current and locked-in discount rates).

For Tables 7.1 a and 7.1 b, the actuary should not take into account experience gains and losses resulting from variances related to financial risks. These variances will be discussed in Section 7.3.

The actuary should provide explanations where the amounts warrant it and make relevant links to the changes made to the assumptions described in the next section.

7.2 Summary of changes in assumptions - insurance service

In this section of the Report, the actuary must discuss changes to the assumptions for the remaining coverage liabilities and to the assumptions for incurred claims liabilities for all contracts.

For this purpose, the actuary must include Tables 7.2 a and 7.2 b for all of contracts. The total is on a consolidated basis. The information in Table 7.2 a should be provided by type of assumption and the information in table 7.2 b should be provided for each of the portfolios as per Table 2.1, even when the change in net contract liabilities for a portfolio is below materiality standard. For subsidiary business, only the aggregate total for all assumption types and all portfolios should be presented.

In Tables 7.2 a and 7.2 b, the change in net liabilities should be broken down into liability components. In addition, the actuary should disclose the amount of the change in net liabilities that has been reflected in the insurance service result (i.e., the impact of changes that do not adjust the CSM) and in the net investment result (i.e., the impact due to the difference between current and locked-in discount rates).

For Tables 7.2 a and 7.2 b, the actuary should not take into account assumption changes resulting from variances related to financial risks. These variances will be discussed in Section 7.3.

For Mortality, Longevity, Morbidity, Lapse, Directly Attributable Expenses and Other items in Table 7.2 a, the actuary should quantify the change in net contract liabilities due to assumption updates.

For example, it is the AMF's view that net changes due to the following items should be treated as an assumption update:

- Percentage assumption updates in a contingency table following an experience study;
- Changes resulting from new actuarial or accounting standards that the actuary is required to apply (except situations qualified as adjustments).

For the Model and Methodology Changes item, the actuary should quantify the change in net contract liabilities due to a change of a rare or unusual nature, resulting from a different election by the actuary.

For example, the AMF considers changes in net contract liabilities due to the following items must be considered a model and methodology change:

- A change in the methods/techniques used to determine the *risk adjustment for non-financial risk*, and a change in the level used (e.g., for confidence level, CTE level, or the direct margin on the assumption);
- A change in a contingency table (e.g., mortality, morbidity, etc.);
- The use of results of an experience study covering a different number of years;
- A change in the insurer's method of allocating expenses between directly attributable and non-attributable expenses, or expenses reported under IFRS 17 versus other standards;
- A change in the method of allocating expenses between acquisition expenses and maintenance expenses, affecting directly attributable expenses, which would have an impact on net contract liabilities;

- A different allocation of directly attributable maintenance and acquisition expenses to the following categories: per contract, per \$1,000 in-force business, as a percentage of the premium (where the allocation results is based on a choice and not a study);
- A change in the method of accounting for the *CSM* through profit or loss or in determining the interest to be capitalized on the *CSM*;
- A change made to a stochastic model, when such change does not arise from amendments to actuarial standards of practice;
- A change arising from an improvement in valuation systems or a refinement of methodology (except situations qualified as adjustments);
- A change resulting from new actuarial or accounting standards, where application is at the actuary's discretion (except situations qualified as adjustments).

For the Management Actions item, the actuary should quantify the change in net contract liabilities due to management actions such as:

- A change in *reinsurance contracts* in force without derecognition;
- A change in product characteristics, such as a change in the dividend scale, an adjustment to contractually adjustable products or a review of the management fees applicable to universal life policy funds or segregated funds.

Finally, under the Error Corrections item, the actuary should quantify the change in net liabilities due a correction of non-material errors.

The actuary must include a summary table of the assumption changes in the following format. Note that each of the assumption changes must be sufficiently justified to allow for a proper understanding. In addition, the actuary may refer to section 4.2 of the report where a detailed assumption change rationale must be provided.

ASSUMPTION CHANGES				
	Assumption		Type of variation	Justification
	Previous	Current		
Mortality				
Individual life,				
Non-participating				
• Non-consolidated business				
• Subsidiaries				
...				
Morbidity				
...				

7.3 Summary of Net Financial Variations for insurance contracts

In this section of the Report, the actuary must provide details of the net change in contract liabilities related to financial variations.

To this end, the actuary should present Tables 7.3 a and 7.3 b for all of his contracts, on a consolidated basis. The information in Table 7.3 a should be provided by type of change and the information in Table 7.3 b should be provided for each of the portfolios according to Table 2.1. For subsidiaries, only the aggregate total for all types of variations and portfolios should be presented.

The types of variation types are as follows:

- The accretion expenses of net contract liabilities (unwinding of discount curves);
- The changes in net contract liabilities due to changes in interest rates;
- Changes in net contract liabilities due to changes in financial assumptions;

- Change in the fair value of the underlying items of directly participating insurance contracts;
- The application of the risk mitigation option.

In Tables 7.3 a and 7.3 b, the change in net liabilities should be broken down by liability components. The actuary must also disclose the amount of change in net liabilities that was reflected in net investment income and in other comprehensive income (OCI).

The actuary should include a rationale for changes in financial assumptions.

7.4 Other Changes

The actuary must quantify the change in net contract liabilities due to all other types of changes that are not related to experience, cash flows, assumptions, methods and corrections.

For example, it could be

- The impact of foreign currency exchange rate updates;
- The acquisition (sale) of an insurance portfolio;
- Reinsurance/retrocession (or recapture) of a portfolio.

Section 8 - Reinsurance program

8.1 Reinsurance contracts held

The actuary must present Table 8a to catalogue all the *reinsurance contracts* held.

The actuary must also present Table 8b to catalogue new *reinsurance contracts* held and changes the amendments to existing *reinsurance contracts* held (riders) that were issued during the period, **as well as *reinsurance contracts* held/amendments that were not signed at the end of the prior period.**

8.2 Additional information

The actuary must provide a high-level description of certain items (in connection with the reinsurance policy), including:

- The overall reinsurance strategy and how it is applied in the coming years;
- Any change in retention limits;
- The counterparty risk assessment for the reinsurers they deal with. If the actuary does not conduct an assessment, this must be mentioned and justified;
 - The reinsurer's minimum acceptable credit rating and any changes in it;
 - The maximum concentration per reinsurer and any changes in it;
- Non-traditional *reinsurance contracts*, such as finite reinsurance agreements, with an insignificant risk transfer, and side agreements with an impact on an existing reinsurance agreement. The actuary must also disclose the purposes of these types of *reinsurance contracts*. The actuary must also ensure that the measurement of net contract liabilities adequately accounts for the impact of these contracts and must describe in the report how this was ascertained;
- Catastrophe *reinsurance contracts* and their terrorism and pandemic clauses. The items to disclose are as follows:
 - Amounts of terrorism and pandemic coverage (including the level of deductible, coinsurance and limits);
 - Terrorism exclusions (risks and events not covered, etc.);
 - Pandemic exclusions (risks and events not covered, etc.);
- Any endorsed reinsurance agreement, i.e., an agreement in which the insurer cedes a block of business to a reinsurer, and then agrees to take back the same block or a

similar block. The AMF does not allow capital credits to be taken for such arrangements.

Section 9 - Modelling for the valuation of contracts that include financial guarantees

In this section of the Report, the actuary must provide information about the valuation of contracts that include financial guarantees.

The stochastic models used for the valuation of these contracts must be described in section 9.1. An overview of the characteristics of these contracts, whether or not the valuation uses a stochastic approach, must be provided in section 9.2.

9.1 Stochastic models

In this section, the actuary must provide information about the stochastic modelling used for various types of contracts that includes financial guarantees.

Although some types of contracts are found in this section, the AMF nevertheless expect the deterministic assumptions to be placed in section 4.2 of the report, whether they are static or dynamic.

The purpose of this section is to help clarify the stochastic models used.

9.1.1 Guarantees of variable insurance contracts relating to segregated funds

In this section, the actuary must provide information about the stochastic modelling of the guarantees of variable insurance contracts relating to segregated funds.

The actuary must describe the valuation method for the calculation of net contract liabilities, including:

- The modelling approach for cash flows and cash flow partitioning;
- A description of the random number generator(s);
- A description of the economic scenario generator(s), including:
 - The scope (interest rates, bond indexes, stock market indexes, inflation, etc.);
 - The rationale for selecting the generator used;
 - The modelling of the discount rates;
 - The number of scenarios and the projection frequency (time steps);
 - The calibration of the parameters and data sources used;

- The data tags (*Bloomberg, DataStream, etc.*) used for the calibration of certain assumptions;
 - For the stochastic modelling of economic assumptions used (interest rates, bond yield, equity returns, inflation, exchange rate, implied volatility, etc.), the 1st, 5th, 10th, 15th, 50th, 85th, 90th, 95th, and 99th percentiles of the distribution of spot rates for 5-10-30- and 60-year durations;
 - The presence or absence of the mean reversion property;
- Basis risk modelling;
- Adjustments made to the model(s) to reflect the difference between the guarantee(s) and the financial instruments used to determine observable market parameters; and
- Any approximations.

The actuary must also describe the hedging strategy modelling, including the level of hedging, if any.

9.1.2 Financial guarantees relating to universal life insurance contracts

In this section, the actuary must provide information about the stochastic modelling of the financial guarantees relating to universal life *insurance contracts*.

The most common (but not only) forms of guarantee are the following:

- Amounts invested in a fixed-term guarantee investment contract (“GIC”) or in account(s) comprised of guaranteed investment portfolios;
- For contracts with a dynamically measured redemption value, i.e., where it varies based on an interest rate that depends on the performance of an index or an underlying portfolio of assets;
 - * For contracts for which the client's account generates a return net of management fees (which may be negative) and for which an implicit guarantee of 0 % is stipulated in the contract;
- Minimum return guarantees;
- Indexed guarantees;
- Minimum bonus guarantees;
- Smoothed return guarantees.

The actuary must describe the valuation method for calculating the net contract liabilities and include the same items as those requested in section 9.1.1 of the Guide.

9.1.3 Financial guarantees relating to other types of contracts

In this section, the actuary must provide information about the stochastic modelling of other types of contracts that includes financial guarantees, both explicit and implicit, including:

- Participating products, including minimum dividend guarantees;
- Contractually adjustable products with a limit of adjustability;
- Guarantees on other types of life insurance products;
- Indexation guarantees on annuity contracts and on deposit accumulation contracts;
- Guarantees on group insurance contracts sold.

The actuary must describe the valuation method used to calculate the net contract liabilities, including the same items as those requested in section 9.1.1 of this Guide.

9.2 Summary of contracts that include financial guarantees

9.2.1. Guarantees of variable insurance contracts relating to segregated funds

In this section, the actuary must provide information about the net contract liabilities (excluding the CSM) in the insurer's general funds concerning guarantees of variable insurance contracts related to segregated funds.

In the report, the actuary must present, for its different products/grouping of contracts, tables for the various types of guarantees of variable *insurance contracts* relating to segregated funds for which the insurer bears the risk.

Accordingly, the actuary must present Tables 9.2.1a to 9.2.1e.

These tables deal with the following guarantees:

- Guaranteed minimum withdrawal benefit ("GMWB") in the payment phase;
- Guaranteed minimum withdrawal benefit ("GMWB") in the accumulation phase;
- Guaranteed minimum maturity benefit ("GMMB");
- Guaranteed minimum death benefit ("GMDB");
- Other guarantees.

If in Table 9.2.1e the actuary presents items for "Other guarantees" of variable *insurance contracts*, the nature of these guarantees must also be specified.

For each guarantee specified, the “In-the-money”/”Out-of-the-money” status is calculated using the actuary’s assumptions. The actuary must describe how the “In-the-money”/”Out-of-the-money” statuses were established for the various types of guarantees. It should be noted that the market value of assets held must be established on the date the net contract liabilities (excluding the CSM) are calculated.

Variable *insurance contracts* that offer several types of guarantees simultaneously must appear in each of the corresponding tables.

Group of different contracts can be presented together, as long as these groups have similar guarantees (e.g., do not group contracts that offer a 75% guarantee with contracts that offer a 100% guarantee).

The actuary should also discuss any other information deemed relevant.

9.2.2 Financial guarantees relating to universal life insurance contracts

In this section, the actuary must provide information for universal life *insurance contracts* that include financial guarantees for its different products/grouping of contracts. These guarantees may take different forms in a universal life insurance contract, as mentioned in section 9.1.2.

Accordingly, the actuary must present Table 9.2.2.

The actuary should also discuss any other information deemed relevant.

9.2.3 Financial guarantees relating to other types of contracts

In this section, the actuary must provide information for other types of contracts that include financial guarantees for its different products/grouping of contracts. These guarantees may take different forms in a contract, as mentioned in section 9.1.3. Given the many forms of financial guarantees that may be included in this section, the actuary must provide enough details on the nature of the guarantees to ensure good understanding.

Accordingly, the actuary must present Table 9.2.3.

The actuary should also discuss any other information deemed relevant.

Section 10 – Conclusion

i) Compliance status

The Report must state the actuary's compliance status with the CIA Standards of Practice. Grounds for non-compliance must be clearly explained and justified.

ii) Restrictions

Any restriction related to the valuation carried out by the actuary and resulting in a modification of the actuary's certificate must be explained in this section.

The actuary must clearly describe the reasons and state the impact on net contract liabilities as well as the steps that were or will be taken to rectify the situation.

Appendices

Appendix 1 – Actuary’s certificate

In accordance with section 128 of the Act, the actuary’s report must be accompanied by a certificate.

The actuary must include in the Report the text of the actuary’s certificate below. The wording of the certificate corresponds to the wording recommended in the CIA Standards of Practice applicable to insurance.

The terminology in brackets can be adjusted based on the terminology used to present the financial statements. The AMF will consider any other change to be a qualified opinion. Any restriction concerning the certificate must appear in section 11 ii) of this Report.

The certificate must be signed by the actuary and it must state the actuary’s date of appointment. Since the AMF requires an electronic version containing the actuary’s signature to be submitted, in PDF format, the paper or electronic version containing the actuary’s signature must be kept in the insurer’s office for review by the AMF if required. This signature must be an original in the report submitted to the AMF.

To the policyholders [and shareholders] of [the ABC insurance company]:

I have valued the policy liabilities of [the Company] for its [consolidated] financial statements prepared in accordance with International Financial Reporting Standards for the year ended [December 31, XXXX].

In my opinion, the amount of policy liabilities is appropriate for this purpose. The valuation conforms to accepted actuarial practice in Canada and the [consolidated] financial statements fairly present the results of the valuation.

The valuation complies with the Quebec Insurers Act and its regulation.

Signature

Name in block Letters

Date of appointment

Appendix 2 – Specific disclosure requirements

Disclosure of compensation

In light of the actuary's responsibilities under the Act, an actuary who may receive incentive compensation related to the company's net income or incentive compensation that could create conflicts of interest must disclose this fact in writing to the key users of the actuary's work. The actuary must include this disclosure in the Report submitted to the regulator.

Consequently, this section of the Report, must briefly discuss the method used to determine each portion of the actuary's compensation (in particular, salary, bonuses (cash or stock), employee benefits and any other form of compensation) that is related to the insurer's net income (or comprehensive income) or solvency ratios or that could create conflicts of interest. In addition, the actuary must disclose, where applicable, any participation in a plan to purchase shares or any holding of shares of the insurer, a sister company, a subsidiary or any other affiliate.

Annual presentation of the Report to the board of directors or the audit committee

This section of the Report must disclose the date on which the actuary presented the liability report to the board of directors or the audit committee¹⁰. If the Report has not yet been presented to these bodies, the actuary must enter the expected date of presentation.

CIA's continuing professional development requirements

This section of the Report must confirm that the actuary is in compliance with the continuing professional development requirements of the CIA.

Reporting relationships of the actuary

The actuary must disclose all reporting and non-arm's length relationships.

The actuary who is employed by the insurer must disclose the name and titles of the person(s) to whom the actuary reports to, and any changes in this regard that have occurred during the period. Both solid line and dotted line reporting relationships should be disclosed, as well as anticipated changes.

The actuary who is not an employee of the insurer must disclose the names and titles of the main contacts within the insurer. The information provided could include the name and title of the following:

¹⁰ As required by section 128 of the Act.

- * The person who hired the actuary;
- * The insurer's employees with whom the actuary discusses findings and reports.

Appendix 3 – New contract issues and new products

A3.1 Summary of new contract issues

In this appendix of the Report, the actuary must present Table A3.1 for new issues of portfolio/product type groupings for which Table 2.2 shows that the grouping is open to new contracts.

For each portfolio/product type, the actuary must include the *LRC* and *LIC* of *insurance contracts* and *reinsurance contracts* held, the data on premiums, the insured or reinsured face amounts, *FCF*, *CSM*, the *PAA* and the loss component of onerous contracts (or the loss recovery component of onerous *insurance contracts*).

A3.2 Summary of new products

In this appendix of the Report, the actuary must describe the new insurance and annuity products (including participating products) or new generations of existing products being marketed. The actuary must discuss the following:

- The new features of the products, in comparison to existing products or previous generations;
- The client group targeted by the product;
- The client needs addressed by the product;
- The distribution method;
- The expected sales in the coming years (number of contracts and face amount issued and ceded);
- The reinsurance contract(s) held (in connection with section 8 of the Guide).

The actuary does not have to provide details about the valuation methods and assumptions, as they are already provided in section 4.2 of the Report. The actuary must, however, describe and justify differences between valuation assumptions and the pricing assumptions.

Appendix 4 – Asset and liability management (ALM)

Although, owing to the transition to IFRS 17, the value of net contract liabilities is no longer directly related to the value of the matching investment items, the AMF expects the insurer to continue to have a process for managing mismatch risk. Investment matched to the net contract liabilities are also often an indicator of contract liquidity and can be used to establish interest rate curves.

A4.1 Asset and liability matching

The actuary must also discuss the following items ¹¹:

- The contract/product aggregation included in each segment;
- The methodology used to segment investment items matched to contract/product aggregation in each segment;
- For the measures used in this section, the methods and assumptions used must be clearly defined, including the returns and how the future cash flows of the investment items were defined;
- The objective of the matching process (e.g., to reduce interest-rate sensitivity of profits, equity, etc.);
- The immunization strategy and measures used (e.g., alignment of future cash flows, durations, convexities, etc.);
- Mismatch tolerance limits;
- Maximum maturity of future cash flows from contract/product aggregation for immunization against interest rate risk using fixed income investment items;
- Investment strategies for the purpose of investing inflows;
- The hedging strategies used to manage mismatch risk by segment, including inter-segment transaction strategies and the values of those transactions;
- The insurer's policies concerning the composition of investment items, including how the insurer accounts for the type, duration, quality and negotiability of the investment items;
- The frequency of rebalancing the matching of each segment;
- The frequency for monitoring changes in the matching position for each segment;

¹¹ Some items must be linked, to the integrated risk management policy, the risk appetite and levels of risk tolerance statement or the insurer's investment policy.

- The use of inter-segment transactions must be described and justified.

All changes in the insurer's practices concerning asset and liability management must be disclosed.

To provide a detailed description of the matching level by segment based on duration, the actuary must first present Table A4.1a. A segment for the non-consolidated surplus is also required.

To provide a detailed description of matched investment items for each segment, the actuary must also present Table A4.1b. Please note that the same instructions for Table A4.1a also apply to this table.

Appendix 5 - Information on subsidiaries

In this appendix of the Report, the actuary must present information about the subsidiaries.

The information provided must include:

- The names of the subsidiaries;
- The insurer's interest in the subsidiaries;
- A description of the lines of business in which they operate;
- A description of the *reinsurance contracts* between the insurer and the subsidiaries;
- Other types of agreements with the subsidiaries;
- A description of the audits carried out by the actuary on the subsidiaries' amounts included in the consolidated financial statements.

Appendix 6 - Contractually adjustable products and participating products

A6.1 Contractually adjustable products

In this appendix of the Report, the actuary must describe the method used to determine the adjustments to be made to contractually adjustable products, as well as the philosophy concerning the fair treatment of contract holders.

For this purpose, the actuary must present Table A6.1. The total for the column CARLI capital credit column must correspond to the amount in line 100, column 50 page 90000 of the CARLI form, but excluding the amounts attributable to the subsidiaries (i.e. on a non-consolidated basis).

A6.2 Participating products

In this appendix of the Report, the actuary must provide information about participating products.

The actuary must, in particular, present Table A6.2 for the participating account and for each participating sub-account, based on the insurer's management practices (blocks managed together), for the last three periods. The sum of the participating sub-account tables must be equal to the participating account table, which is required in the Excel file.

The actuary must also provide the following documents and information, where applicable:

- For each participating sub-account (or the participating account):
 - A brief description of the nature of the sub-account including:
 - The types of products;
 - The source (block acquired from another insurer, block from a demutualization, etc.);
 - The years of issue of the contracts;
 - A brief description of the dividend scale(s) including all changes made during the period, the key factors for these changes, and prospective changes compared to the current scale(s);
 - For each period in Table 7.2 in which transfers to retained earnings or to the non-participating account exceed the maximum transferable amount allowed under section 542 of the Act, the actuary must justify and explain how, despite these transfers, compliance was maintained with this section of the Act which provides for minimum dividend rights for owners of participating contracts;

- The most recent policy for determining the dividends and bonuses payable to the holders of participating contracts approved by the board of directors, as required by section 543 of the Act;
 - A description and justification of all changes made to the dividend policy during the period;
- The most recent report to the board of director regarding the actuary's opinion on the compliance of the allocation of benefits to the holders of participating contracts with the policy established in that regard, as required by section 543 of the Act;
- The most recent participating fund surplus management policy approved by the board of directors, as required by section 544 of the Act;
 - A description of and justification of all changes made to the participating fund surplus management policy during the period;
- The study on the terms for the allocation of income and expenses in relation to participating and non-participating funds, which is required by the AMF under section 548 of the Act (note that the submission of this study is no longer required through AMF E-Services, but it is instead included in the Report).

Appendix 7 - Additional IFRS information for CARLI

In this section of the Report, the actuary must present Table A7.1 concerning the consolidated “Eligible Deposits” that are included in the numerator of the solvency ratio based on the *Capital Adequacy Requirements Guideline - Insurance of Persons* (“CARLI”)

The actuary must also present Table A7.2 concerning credits for participating products and contractually adjustable products on a consolidated basis.

In the event of discrepancy with the amounts disclosed in the CARLI form or in the LIFE returns, the actuary must quantify and explain the differences.

The actuary must identify the *portfolios* of insurance contracts affected by the eligible deposits or credits, as well as the portfolios of reinsurance contracts held that support them. Alternatively, the amount allocated to each *portfolio* can be disclosed in the Appointed actuary’s report on Capital Adequacy Requirements Guideline.

Appendix 8 – Net income analysis

This appendix should include table A8 detailing the consolidated net income according to the following factors:

Insurance Service Result :

- Expected Insurance Service Result
 - Change in risk adjustment for non-financial risk expired
 - CSM recognised for service provided
 - Expected earnings on PAA insurance business
- Impact of new insurance business
- Insurance experience gains (losses) - includes gains and losses from contracts measured under the PAA as well as financial losses from onerous contracts measured under the VFA
- Insurance assumption changes and management actions

Total Insurance Service Result

Net Investment Result :

- Expected investment earnings (matched portfolio¹²)
- Investment experience gains (losses) (matched portfolio)
- Financial assumption changes (matched portfolio)
- Expected investment earnings other assets
- Investment experience gains (losses) other assets

Total Net Investment Result

Other results:

- Other Income and Expenses
- Income taxes

Profit (loss) after taxes

At a minimum, Table A8 must be provided for all of the insurer's consolidated business. When an internal presentation of results is made in a different form or in a more granular manner, the AMF expects the actuary to share it in this appendix.

It is understood that certain items in Table A8, such as the expected earnings on PAA insurance business, can be obtained by using information from the insurer's business plan that is not accounting information.

¹² The matched portfolio includes investment returns of the assets supporting the net contract liabilities and the net finance income or expense associated with those contracts.

The actuary should describe the various elements that make up the drivers in table A8 and provide explanations where required.

In particular, for the expected investment earnings, the actuary should describe:

- Assumed return assumptions for non-fixed income assets
- Assumed interest rate projection for the return on fixed income assets and for the liability finance expense.
 - For interest rates in the observable period;
 - For interest rates in the unobservable period (e.g., the actuary assumes that the interpolation to the ultimate rate is updated).

Additional appendices

In these appendices, the actuary must present any other information deemed relevant.