



March 2, 2018

TO: ALL LONG-TERM LICENSEES

### **Annual Actuarial Requirements**

As your Company's actuary is in the process of preparing to carry out procedures for completing the annual actuarial valuations and assessments, the Insurance Commission of The Bahamas ("ICB") has summarized its requirements including specific duties and requirements of the actuary in fulfilling his/her obligations and performing the required work.

#### **Actuarial valuation report required to be submitted under section 62 of the Insurance Act, Chapter 347.**

The ICB requires the Actuary to

- a. Comply with the requirements of the Code of Conduct<sup>1</sup> of the Caribbean Actuarial Association ("CAA"), or the relevant code of conduct of their internationally recognized actuarial governing body;
- b. Follow generally accepted actuarial principles and practices, in particular, the relevant standards (including exposure drafts) and guidance issued by the CAA<sup>2</sup>; and
- c. Be a Fellow of an internationally recognized exam setting body of Actuaries.

The ICB expects that the Actuary:

1. Value long-term (e.g. traditional ordinary life) policyholder liabilities of the insurer using a gross premium valuation methodology based on best estimate assumptions with margins for adverse deviations (e.g. Policy Premium Method, Canadian Asset Liability Method). Short-term (e.g. health) policy benefit liabilities are to be valued using a method the actuary determines appropriate for the portfolio of business;

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<sup>1</sup> <http://www.caa.com.bb/Governance/CAA-Codes-of-Conduct.aspx>

<sup>2</sup> <http://www.caa.com.bb/Governance/Standards-of-Practice.aspx> APS2: The Prudential Supervision of Long Term Insurance Business; APS0: General Actuarial Practice; Glossary of Defined Terms Used in CAA Actuarial Practice Standards

2. Be familiar with:
  - i. The current and likely future economic, investment and regulatory environment within which the insurer operates;
  - ii. The insurer's products - terms of existing and new business including options, guarantees, and any implicit liabilities created by regulations, literature, illustrations or precedent;
  - iii. The insurer's operations and business plans or any implicit liabilities created by regulations, literature, illustrations or precedent;
  - iv. The insurer's policies and practices (e.g. investment, allocation of profits to policyholders and shareholders);
  - v. The programs and strategies used by the insurer to identify, measure, manage, control risk (e.g. reinsurance arrangements, asset/liability management);
3. Identify all material risks faced by the insurer;
4. Consider the impact of any non-insurance activities of the insurer;
5. Establish suitable control procedures to verify that the data (assets and liabilities) are sufficient, reliable, accurate, and are valued consistently. The Actuary may rely on an independent external auditor for the accuracy of the data used in the valuation;
6. Make appropriate assumption estimates for each material contingency that include, but are not limited to, the effects of any anti-selection, back-to-back arrangements and cliff benefits. The choice of assumptions should be based on recent investigations of the insurer's experience and that of the most comparable, recent, published industry studies. External factors affecting the industry and economy may influence the choice of assumptions. The insurer's capital and surplus position shall not affect the choice of assumption;
7. Establish adequate margins for adverse deviation that reflect the degree of uncertainty in the estimate of each assumption and the potential deterioration thereof. The internal practices of the insurer (such as underwriting, matching, immunization) and the characteristics of the insurance policies in force shall be taken into consideration in setting the margins;
8. Check the reasonableness of the valuation results;
9. Report in accordance with the Regulations and Section 3.2, Report of the CAA APS0 – General Actuarial Practice. The report should be comprehensive and should also include,
  - i. Actuarial Certificate per Form 24 of the Insurance (General) Regulations, 2010;
  - ii. The rationale, justification and validation of each expected experience assumption used including the method of validating it and when it was last validated. A comparison of actual to expected experience assumptions shall be shown separately for each product line. With respect to expenses, the report should disclose the method used to develop the allocation of expenses to each product line and demonstrate how expected expenses used in the valuation reconciles to budgeted expenses;
  - iii. The amount of negative reserves and cash value deficiency, if applicable;

- iv. Discussion of the material risks faced by the insurer and the results of sensitivity analysis conducted;
- v. Summary of the insurer’s risk management program and comments on its appropriateness and effectiveness;
- vi. Brief description of the insurer’s reinsurance arrangements and comments on its appropriateness;
- vii. Discussion on the appropriateness of the investment policy with regards to the nature and term of the liabilities and the available investments;
- viii. Summary of the insurer’s policy in regard to dividend distribution, the basis adopted in the distribution of surplus between the insurer and policyholders, and the amount of such distribution;
- ix. Table of policies in-force as at the date of the valuation using the tabular format set out below. The Actuary should insert the relevant products and product line groupings as appropriate.

		Date of Valuation					
Product	Number of policies or certificates	Gross			Net of Reinsurance Ceded		
		Annualized Premium	Face Amt. or Annual Annuity Benefit	Policy Benefit Liability	Annualized Premium	Face Amt. or Annual Annuity Benefit	Policy Benefit Liability
	#	\$'000	\$'000 or \$ p.a.	\$'000	\$'000	\$'000 or \$ p.a.	\$'000
Product A							
Product B							
...							
Subtotal product line 1							
Product C							
Product D							
...							
Subtotal product line 2							
.....							
Subtotal product line n							
TOTAL All Product Lines							
Adjustment							
Total Financial Statements							

- x. Reconciliation of policyholder liabilities using the following form. The Actuary shall insert the name of relevant product types, as appropriate. A brief description of each assumption change shall be included in the left hand column and associated impact shall be recorded in the relevant product line column.

	Policy Benefit Liabilities All Product Lines (net of reinsurance ceded)				
	Product Line				
	Line 1	Line 2	...	Line n	Total Lines
	\$'000	\$'000	...	\$'000	\$'000
End of prior year					
Change of Assumption 1					
Change of Assumption 2					
....					
Change of Assumption n					
Subtotal (A)					
Change in prior year in-force due to passage of time (lapse, surrender, maturity, etc.)					
New Business					
Subtotal (B)					
End of Current Year (A + B)					

- xi. Table of provisions of adverse deviation (PAD) as at the date of valuation

	Policy Benefit Liabilities as at ... (net of reinsurance ceded)				
	Product Lines				
	Line 1	Line 2	...	Line n	Total Lines
	\$'000	\$'000	...	\$'000	\$'000
Before PAD					
PAD 1					
PAD 2					
.....					
PAD n					
Total PADs					

## **Risk-based Capital Framework**

The Insurance Commission introduced its proposed **Risk-based Capital (RBC) Guidelines** for the Long-term Insurance Industry on March 3, 2015. The latest version of the draft RBC Guidelines has been posted to the Commission's website ([www.icb.gov.bs](http://www.icb.gov.bs)), under the Policies and Guidelines section. Also posted to the website is the reporting form, to assist with the calculation of the Risk Based Capital test.

The most recent version of the draft RBC Guidelines has been revised to include two modifications to the asset discount factors in section 5(A) of the guidelines, with respect to the treatment of land and buildings used in operations and mutual funds. For land and buildings used in operations, we have amended this factor to reflect a 15% discount rate, which is the same as for investment properties. Regarding the mutual funds, we are permitting insurers the option of using the 'look through' approach to the underlying assets of the fund.

The RBC Framework will become effective for the December 31, 2018 filings and until such time, all companies are required to submit the RBC worksheet, along with the existing quarterly reporting forms via the Vizion Online Reporting Information Management System (ORIMS) portal within 45 days of the end of each quarter.

### **Performing scenario/stress testing in accordance with the ICB's guideline (attached at Appendix A);**

By memorandum dated 22 February 2012 the ICB required life insurers to perform annual stress testing of their portfolios in accordance with its stress testing guideline. The aim of this is to provide information on the stress scenarios that are most detrimental to the solvency position of the company, and to allow for appropriate actions to mitigate potential risks to be taken.

The ICB considers stress testing to be a necessary risk management tool for long-term insurance companies, and the following recommendations should improve the coverage and usefulness of the stress testing initiative:

- All companies should examine sensitivity to the minimum set of scenarios contained in the guideline, unless the actuary is able to justify in the report that particular scenarios are not relevant to the company; in which case alternative and more relevant scenarios should be used.
- All companies should at a minimum consider the impact of the minimum set of scenarios on both The Bahamas Solvency Ratio and the Risk-based Capital Adequacy Requirement.
- In cases where companies substitute other scenarios which are considered more relevant, the actuary should ensure that these scenarios are at least as severe as the ones being replaced.
- All companies not satisfying the proposed Risk-based Capital Adequacy Requirement should submit a plan advising of how solvency will be achieved.
- All companies should ensure that stress test results are expressed relative to their target solvency ratios and include details on how capital may be raised for those scenarios that

result in the capital position falling below their target level.

- All companies should examine the vulnerability of the company to a plausible combination of stress scenarios, where applicable.
- The management of each Company should share their individual results from this exercise with the Company's Board of Directors.

The stipulated stress test scenarios remain unchanged from those specified in the January 13, 2017 Annual Actuarial Requirements memorandum (see Appendix A attached). The Commission recommends that all companies stress test the Interest Rate Risk scenarios (I1, I2, and I3) as part of their 2018 submission, regardless of the type of business undertaken.

The Insurance Commission would like to ensure that the actuary's duties and responsibilities outlined in this memorandum are fulfilled and incorporated into the Company's actuary report. As a reminder, reports are to be submitted to the ICB on or before **April 30, 2018.**

The scenario/stress testing results could be included in a separate report due on or before **June 30, 2018.**

**APPENDIX A**  
**INSURANCE COMMISSION OF THE BAHAMAS**  
**STRESS TESTING FOR INSURANCE COMPANIES**

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## **INTRODUCTION**

The primary purpose of this document is to provide guidance and support to actuaries of life insurers in conducting stress tests on their business.

“The business of insurance is based on dealing with uncertainty. Therefore, an insurer needs to consider a wide range of possible outcomes that may affect its current and expected future financial position. Stress tests are a necessary risk management tool for both insurers and supervisors to ascertain whether insurers are financially flexible to absorb possible losses that could occur under various scenarios.”<sup>3</sup>

Stress testing means a determination of just how far the risk factor(s) in question has to be changed in order to drive the insurer’s surplus negative during the forecast period, and then evaluating if that degree of change is plausible.<sup>4</sup>

The principal goal of this process is the identification of possible threats to the financial condition of the insurer and appropriate risk management or corrective actions to address those threats. The process arms the insurer with useful information on the course of events that may lead to capital depletion, and the relative effectiveness of alternative corrective actions if necessary. Furthermore, knowledge of the sources of threat may be results in the strengthening of the monitoring systems where the insurer is most vulnerable.<sup>5</sup>

### **Forecast Period**

The forecast period is 5 fiscal years for long-term business and 2 fiscal years for short term business.

Based on the results of the stress tests, the regulator reserves the right to require the company to perform the tests using a different forecast period.

## **STRESS TESTS FOR THE LIFE INSURANCE SECTOR**

### **Base Scenario**

The base scenario should employ best estimate assumptions with provisions for adverse deviation from these assumptions. For most companies these would be consistent with the assumptions used in the statutorily required actuarial valuations.

The base scenario should also include new business projections consistent with the company’s business plan for the forecast period. Any actions by management such as injection of capital, reduction of per unit expenses etc, as a consequence of the new business production should be included in the base scenario.

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<sup>3</sup> Stress Testing by Insurers Guidance Paper : International Association of Insurance Supervisors (October 2003)

<sup>4</sup> CIA Educational Note: Dynamic Capital Adequacy Testing (November 2007)

<sup>5</sup> CIA Educational Note: Dynamic Capital Adequacy Testing (November 2007)

## **Base Risk Based Capital ratio**

The risk based capital (RBC) ratio is determined as in accordance with the Long-term Insurance Capital Adequacy Guideline. The base RBC ratio is determined at the calculation date and annually thereafter for the forecast period.

The RBC ratio at the calculation date only, without including future new business, should also be calculated and reported.

If the company currently calculates other risk-based capital adequacy ratio, these should also be calculated and reported for the base and stress test scenarios for the forecast period.

## **Stress Test Scenarios<sup>6</sup>**

### **Interest Rate Risk**

I1: 2% parallel upward shift of the yield curve or discount rate assumption

I2: 2% parallel downward shift of the yield curve or discount rate assumption

I3: Downgrade in Bahamas credit rating from BBB- to CCC

### **Asset Price Risk**

A1: 35% price decline in domestic and foreign equity investments

A2: 25% price decline in residential and commercial real estate, including mortgages and investment properties

### **Insurance Risk**

M1: Permanent 25 % increase in mortality rates of insured lives

M2: Permanent 25 % increase in morbidity rates

M3: Permanent 25 % decrease in annuitant mortality rates

M4: For short term personal accident and sickness: Claims inflation increase of +2% above inflation

M5: For short term personal accident and sickness: Claims frequency increase of 10% of the best estimate

### **Expense and Inflation Risk**

E1: Permanent 25 % increase in per unit renewal expenses

E2: Permanent 1% increase in inflation rate

### **Lapse Risk**

L1: Permanent 25% increase in lapse rates

L2: Permanent 25% decrease in lapse rates

### **New Business Risk**

N1: Permanent 25% increase in new business volumes

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<sup>6</sup> These scenarios are meant to be a starting point for stress testing of insurers. They are not an exhaustive list of all the risk categories faced by insurers. For a more exhaustive list of categories of risk please see "Stress Testing by Insurers Guidance Paper (IAIS, October 2003).

N2: Permanent 25% decrease in new business volumes

The stress test assumptions are to be applied to the base assumptions for each year of the forecast period. The assumptions applicable after the forecast period would be the base assumptions for that year.

## **REPORTING<sup>7</sup>**

It is recommended that the actuary verify the current regulatory requirements for the company's situation. It is further recommended that the actuary consult the capital guidelines and rules. The following is an illustrative outline of possible elements of a stress testing report.

### **1. Executive Summary**

The executive summary is useful to provide a high level overview of the results of the stress tests analysis that is described in the report, including:

- summary of the results of the base and required scenario results;
- highlights of the most significant risks to capital adequacy;
- review of the events since the previous stress tests report was submitted, if applicable;
- other significant findings.

### **2. Introduction**

The introduction provides a forum to inform the user about the purpose and basis for the stress test report, consisting of:

- purpose and scope of the stress test report; and
- overview of the processes and methods used for the stress test analysis.

### **3. Solvency Measurement**

The actuary would explain the nature of the regulatory test used to measure the financial condition of the insurer, including:

- definition of RBC ratio requirement;
- description and summary of the insurers current RBC ratio;
- description and summary of any other solvency / capital ratios used by the company; and
- materiality standard used.

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<sup>7</sup> CIA Educational Note: Dynamic Capital Adequacy Testing (November 2007)

#### 4. Background Discussion

This section of the report would provide an overview of the company, and the economic environment during the forecast period, including such things as:

- summary of the nature of the insurer’s business, products and target markets;
- review of recent and current financial position;
- discussion of any key events or initiatives affecting the insurer in the recent past and any associated expected future developments;
- description of economic assumptions; and
- discussion of the current and expected market condition.

#### 5. Base Scenario

A clear description of the base scenario used in the stress test analysis would include:

- brief description of the model or process used to project the base scenario;
- description of main assumptions especially any capital injections or strategic initiatives;
- discussion of consistency of the base scenario with the insurer’s business plan; and
- description of key financial results, including key income statement and balance sheet items, and solvency and any risk based capital adequacy test results. A desirable approach would be to display the results for each year in the projection.

#### 6. Stress Test Scenarios

This section of the report would state the required stress test scenarios as well as any other stress tests the actuary deems appropriate giving consideration to the circumstances of the Company. A summary of the results in the prescribed format below is required. Commentary on the results should also be included.

**Table 1**

	Risk Based Capital Ratio				
	Yr1	Yr2	Yr3	Yr4	Yr5
<b>Base Scenario RBC Ratio without new business</b>	X				
<b>Base Scenario RBC Ratio with new business</b>	X	X	X	X	X
<b>Interest Rate Risk</b>					
I1					
I2	X	X	X	X	X
I3					
<b>Asset Price Risk</b>					
A1	X	X	X	X	X
A2					

	<b>Risk Based Capital Ratio</b>				
	<b>Yr1</b>	<b>Yr2</b>	<b>Yr3</b>	<b>Yr4</b>	<b>Yr5</b>
<b>Insurance Risk</b>					
M1					
M2					
M3	X	X	X	X	X
M4					
M5					
<b>Expense and Inflation Risk</b>					
E1					
E2	X	X	X	X	X
<b>Lapse Risk</b>					
L1					
L2	X	X	X	X	X
<b>New Business Risk</b>					
N1					
N2	X	X	X	X	X

A similar table should be included to show any other risk based capital adequacy levels if the company currently uses such a measure.

## 7. Conclusions

Overall conclusions from the stress test analysis would be presented including a brief description and summary of the results of the base and required stress test scenarios and highlights of the most significant risks to risk based capital adequacy.

## 8. Appendices

Include details of the financial results from the application of the stress test model. Typically the model creates key elements and pages from the financial statements, such as balance sheet, income statement and regulatory measure of solvency and / or risk based capital adequacy. Copies of such exhibits for the base scenario and each of the required stress test scenarios for the forecast period should be included.