



## BANK OF PAPUA NEW GUINEA

### LIFE INSURANCE PRUDENTIAL STANDARD 3/2005

### SOLVENCY STANDARD FOR LIFE INSURANCE COMPANIES

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## **Part I: Preliminary**

- 1 *Authorization:* The Bank of Papua New Guinea (the Bank) is authorized to issue prudential standards under Section 48 of the Life Insurance Act 2000 ('the Act') in relation to prudential matters to be complied with by licence holders, life insurance agents, life insurance brokers, shareholder controllers or indirect controllers.
- 2 *Application:* This Standard applies in respect of each licenced life insurance company at all times during all periods commencing on or after 9 of November 2003.

This Standard applies to the determination and reporting of requirements for solvency for life insurance in PNG. This Standard is the first tier of a two tier requirement under the Act for a licenced life insurance company to hold financial reserves to support their life insurance business. The second tier is set out in the standard for capital adequacy. The first tier addresses solvency of a company in the sense that it has sufficient reserves to meet obligations to policy holders and creditors. The second tier is intended to provide an additional buffer of reserves, over and above the amount needed to meet expected obligations, so as to ensure the financial soundness of a company as a going concern over time.

The purpose of this Standard is to ensure, as far as practicable, that, at any time, the financial position of each statutory fund of a licenced life insurance company is such that the company will be able, out of the assets of the fund, to meet all policy and other liabilities referable to the fund at that time as they become due. This is known as the Solvency Requirement. This Standard requires that this measure of the solvency position of the company be disclosed in the financial statements of the company. Pursuant to Section 28 of the Act, or at the request of industry, the Bank may publish the solvency position of a company or companies.

It is the overriding and absolute intention of this Standard that the appointed actuary and the directors of each life insurance company in PNG adopt and vigorously maintain principles and practices set out in this Standard to this purpose. That is, the Bank expects that any point or detail of this Standard will be applied towards maintaining and disclosing the solvency of the company.

This Standard seeks to provide a comprehensive framework for the development of life insurance in PNG. It goes beyond what is required for the range of product available at the time of writing this Standard. This Standard therefore relies upon the professionalism of the appointed actuary of each life insurance company to ensure that this Standard is correctly interpreted and appropriately applied to that company in accordance with principles and intent of this Standard. It extends the maximum discretion to appointed actuaries in the exercise of the Standard.

In pursuit of its supervisory responsibilities, the Bank will assess the adequacy of any methodology, first and foremost, according to the extent to which a company's practices contribute to the effective communication of meaningful, comparable information to policy holders. No amount of prescription in this Standard can achieve this intent. The onus is on the appointed actuary and the directors of a life company to demonstrate and justify the appropriateness of any method adopted. In particular, the Bank expects that each life insurance provider

of a similar type of life insurance product will adopt consistent and comparable methodologies. The Bank will enforce that intent.

- 3 *Definitions:* Terminology used in this Standard, to the extent it is not specifically defined, takes the same meaning as that in the Act. The following definitions are specific to this Standard, and do not include all terminology from standards.

**Policy Liability:** The present value of the amount expected to be required to meet the obligations and expenses of the current business in force of a life insurance company, or some specified part thereof, calculated in accordance with this Standard as the sum of the Best Estimate Liability and future profits.

**Best Estimate Liability:** The amount expected on Best Estimate assumptions to be required to the end of the benefit period to meet future benefits and expenses related to past transactions for the business in force.

**Best Estimate Assumptions:** Assumptions about future experience of factors such as investment return and inflation used in calculation by the appointed actuary of the estimate of liabilities.

**Termination Value** The Termination Value of a policy is either the amount that would be paid on the basis used in practice from time to time in the event of voluntary termination; or where no amount would be paid, the discounted present value of the unexpired risks, future payments and/or contractual premium refunds.

## **Part II: Statement of Policy**

- 1 *Purpose:* The purpose of this Standard is to prescribe a set of principles for the valuation of the Solvency Requirement for each life insurance company in PNG, whereby, at any time, the value of the assets of each statutory fund of a life company must be of an amount considered sufficient to meet the obligations to policy owners and creditors referable to that fund, under a range of adverse conditions.

The Bank notes that for life insurance, the profit and the financial standing of a company is determined through the valuation of policy liabilities and reported in the financial statements of the company. The Bank Prudential Standard 2/2005 on the Valuation of Policy Liabilities sets out the measure of Best Estimate of these liabilities.

That Standard 2/2005 and this Standard 3/2005 require that the assets are similarly disclosed in the financial statements, valued according to accounting standards at net market value through the profit and loss account.

The financial position of the company may, therefore, be assessed by a comparison of the value of assets and the value of policy and other liabilities so reported.

The prudent regulation of the life insurance requires that the level of security offered to policy owners exceed that implied by a best estimate basis of calculation. This Solvency Standard requires therefore that the statutory fund of a life company have available capital in excess of the Best Estimate Liability to provide for the security of the policy owners' entitlements under a range of adverse conditions.

The Solvency Requirement, in considering scenarios of adverse experience, must provide for risks associated with both the valuation of the policy liabilities and the valuation of the assets. The Solvency Requirement is determined by considering the various risks which could impact upon the security of the policy owners' entitlements, and requiring the provision of a prudent level of reserve against such risks. These include the risks that may affect the value of the liabilities under policies; and the risks which may affect the value of the assets supporting those liabilities.

The Solvency Requirement may then be considered in component parts measured against these risks as follows:

- the Solvency Liability;
- the Other Liabilities;
- the Expense Reserve;
- the Resilience Reserve; and
- the Inadmissible Assets Reserve.

The Solvency Liability is a measure of the value of the guaranteed liabilities under the policies on the basis of assumptions which are more conservative (anticipate a more adverse experience) than best estimate assumptions. This Standard does not prescribe a set of solvency assumptions but requires that the assumptions adopted be disclosed and explained by the appointed actuary.

The Other Liabilities is a measure of the value of the liabilities of the statutory fund to other creditors, but excluding subordinated debt arrangements.

The Expense Reserve provides for the overrun of acquisition expenses which can occur upon closing a statutory fund to new business, and are not anticipated in the Solvency Liability determination.

The Resilience Reserve allows for the mismatch of asset and liability exposures by providing for a reserve for adverse movements in the investment markets to the extent they will not be matched by a corresponding movement in the liabilities. This Reserve is outlined further in Part III, section 4, of this Standard.

The Inadmissible Assets Reserve provides a reserve against the risks associated with: assets, the value of which is dependent on the ongoing conduct of business; holdings in associated financial entities; and concentrated asset exposures. This Reserve is outlined further in Part III, section 3, of this Standard.

This Standard recognises the role, responsibilities and discretion of the appointed actuary in applying the principles, methodology, and intent of this Standard. While the Bank expects that the Solvency Requirement will be calculated in line with these component parts set out above, this Standard extends the discretion to

the appointed actuary of each company to employ the methodology and reasonable assumptions appropriate to, and comparable within, the PNG market.

While this Standard seeks to provide direction and guidance for the appointed actuary of each company, it is not the purpose of this Standard to prescribe a single methodology but to provide a framework to apply the principles set out in this Standard. In particular, this Standard recognises that the actuarial assessment of liability is in process of development in PNG, and it is not yet appropriate to prescribe a set of solvency assumptions.

The essential principle of this Standard is that the Solvency Requirement must provide for risks associated with both the valuation of the policy liabilities and the valuation of the assets, calculated in its component parts on a basis more conservative than Best Estimate, so it is comparable between companies and between similar statutory funds of those companies.

This Standard requires that the appointed actuary disclose and explain at each reporting date in the financial statements and to the Bank the processes and factors employed in calculations and projections for the Prudential Standards, including that for Solvency. The onus for justification of method and assumptions rests with the appointed actuary. This Standard expects that the setting of the assumptions will be consistent with the term and nature of policies in PNG.

- 2 *Scope:* This Standard applies in respect of each licence holder life insurance company at all times during all periods commencing on or after 9 November 2003.
- 3 *Responsibility:* It is the responsibility of the board of directors of each life insurance company to establish a system for monitoring, maintaining and ensuring compliance with this Standard.

The appointed actuary of a life company, in the performance of his or her duties and the exercise of his or her powers, must comply with this Standard. Pursuant to Subsection 102(2) of the Act, the actuary must also comply with generally accepted actuarial standards and principles.

The actuary must draw to the attention of the company and/or to the Bank such matters as required under Section 104 of the Act and any matters that, in his or her professional and ethical capacity, are required to be known to the company and/or to the Bank.

If, after licensing of a life insurance company under the Act, a change of circumstances has the result that:

- any information included in the application for registration, including that for relating to the application, or intent, of this Standard; or
- any information given to the Bank, or contained in a document given to the Bank, including that relating to the application, or intent, of this Standard;

ceases to be accurate in relation to the company, the company must provide written notice to the Bank of the matters in relation to which the information is inaccurate and, accordingly, set out the true position that has now arisen.

## **Part III: Implementation and Specific Requirements**

- 1     *Determination of the Solvency Requirement:* This Standard requires that the Solvency Requirement for a statutory fund be calculated in a consistent structured method comparable between different companies. It recognises that not all the components need to be calculated for all policies, some components may well dominate for some policies. In general, the Solvency Requirement may be calculated as follows:

**(a) CALCULATE SOLVENCY LIABILITY**

For each policy in force, determine the Solvency Liability and sum across policies. No calculation is required if the total is shown to be less than Minimum Termination Value (MTV), that is at the reporting date, the lowest Termination Value that the company is obliged to pay.

**(b) CALCULATE MINIMUM TERMINATION VALUE**

For each policy in force, determine the MTV and sum across all policies. No calculation is required if the total is shown to be less than Solvency Liability.

**(c) MINIMUM OF MINIMUM TERMINATION VALUE**

Determine the greater of the amount in (a) and the amount in (b) and aggregate across the statutory fund.

**(d) ADD EXPENSE RESERVE**

Increase the amount in (c) by the Expense Reserve for the statutory fund.

**(e) MINIMUM OF CURRENT TERMINATION VALUE**

For the statutory fund, determine the greater of the amount in (d) and the total of the Current Termination Value for all policies.

**(f) ADD OTHER LIABILITIES**

Increase the amount determined in (e) by the Other Liabilities of the statutory fund.

**(g) ADD RESILIENCE RESERVE**

Determine the Admissible Assets of the statutory fund, and on the basis of these assets, increase the amount determined in (f) by the Resilience Reserve for the statutory fund.

**(h) ADD RESERVE FOR INADMISSIBLE ASSETS**

Increase the amount determined in (g) by the reserve for Inadmissible Assets for the statutory fund.

**(i) MINIMUM OF POLICY AND OTHER LIABILITY**

For the statutory fund determine the greater of the amount determined in (h) and the aggregate of total Policy Liabilities for all policies and Other Liabilities.

2 *Management of risks associated with assets:* This Standard directs that for assessment of the assets supporting the liabilities of each statutory fund that the risks associated with these assets be actively managed. These risks include that for credit risks, adverse market movements, liquidity, asset concentration, assets used in the conduct of business, holdings in related bodies and so on.

While this Standard recognises that the actuarial assessment of liability is in process of development in PNG, it notes that the philosophy and the principles for the valuation of assets are developed. Whereas the determination of liability may be best advanced by the maximum discretion of the appointed actuary, the principles and procedures applied to the valuation of assets may best require specification and prescription.

This Standard therefore directs that the conduct of the valuation of assets be made on a conservative basis and that the references in this Standard to asset valuation, including the provision of asset reserves, be taken as mandatory by the appointed actuary and the directors of each company. The Bank will enforce this intent.

3 *Reserve for Inadmissible Assets:* The Solvency Requirement must provide a reserve - the Inadmissible Assets Reserve - in respect of:

- an asset which has a value that is dependent upon the continuation of the business;
- holdings in an associated entity which is a financial institution itself subject to legislated minimum capital requirements; and
- the risks arising from asset concentration.

For assets used for the conduct of business, the Inadmissible Assets Reserve must provide for the risk that, in the context of the run-off of the business of a statutory fund closed to new business, the value of the asset differs from the value disclosed in the financial statements.

The closure of a statutory fund to new business may require the downsizing of infrastructure and the rearrangement of assets to match the expected run-off of liabilities. The value of an asset in this context should be determined based on the ability to realise the asset in the process of this rearrangement; or the ability to turn the asset into cash to meet the liabilities as they become due.

Assets that need to be examined include equipment; loans to directors, employees and intermediaries and related parties; policy loans (including premiums due but not received); computer software; future income tax benefits; and holdings in associated entities whose value is dependent upon the continuation of the operation of the life insurance company.

In respect of money loaned or advanced on an unsecured basis to directors, employees, advisers and or other related parties, no value is to be ascribed to the debt. In respect of money loaned or advanced on a secured basis, the value to be ascribed to the debt must not exceed the amount of the security.

The value of any debt due to the company which is secured on a policy of insurance, policy loans (including premiums due but not received) issued by the

company must not exceed the Current Termination Value of the policy. The value of computer software owned by the company must not exceed the known resale value of that software. If the resale value of the software is not known, then a zero value must be assumed. Similarly, the value of a future income tax benefit due to the company must not exceed the value of any income tax benefit that would accrue and be realised on ceasing business.

For holdings in associated and subsidiary entities, where the entity is financially and operationally interdependent, directly or indirectly, with the life insurance company, the value placed on the entity must not exceed the value of net tangible assets. Otherwise, (that is, where the entity is a self sustaining operation), the value placed on the entity must not exceed the market value.

For holdings in associated and subsidiary entities, where such an entity is a financial institution subject to prudential regulation which requires the maintenance of minimum capital, the appointed actuary must establish a reserve to the extent the value of the asset includes some value in respect of that capital.

To allow for asset concentration, the Solvency Requirement must provide a reserve against the adverse impact of a concentration of funds in a particular asset or with a particular obligor. Diversification is an accepted principle of prudent investment. To the extent the asset exposure of a statutory fund is excessively concentrated in a particular asset, or with a particular obligor, a reserve is established against the part of the value of that exposure considered excessive.

If the overall portfolio of assets of the statutory fund has too little diversification, is too illiquid or has too great an exposure to one obligor of low credit standing, or otherwise departs from a conservative valuation, the appointed actuary should add to the reserve for inadmissible assets an amount considered necessary to adequately protect the interests of the policy owners.

- 4 *Resilience Reserve:* The Actuary must assess the resilience of the statutory fund and provide for an appropriate reserve - the Resilience Reserve. In this context, resilience is assessed as the ability of the statutory fund to sustain shocks to the economic environment in which it operates and which are likely to result in an adverse movement in the value of the assets relative to the value of the liabilities.

To the extent that the value of liabilities is not directly linked to the value of the underlying assets, an adverse movement in the value of the assets effectively reduces the level of reserves supporting the liabilities. It is prudent that a company recognise this risk and hold sufficient reserves such that the obligation to policy owners and creditors would still be able to be met following an adverse market movement.

This Standard does not prescribe the method of determination of the Resilience Reserve. As required elsewhere in this Standard, the appointed actuary's statement on the Solvency Statement must provide details of the calculation processes and the assumptions used in deriving the results.

- 5 *Asset Exposure:* The appointed actuary in assessing the asset risks, must take account of the effective exposure of the fund to various asset classes, regardless of

the physical asset holdings of the fund, and consider exposure to counterparty risks including, but not limited to, futures and options contracts, swaps, hedges, warrants, forward rate and repurchase agreements.

To this end, this Standard requires that the appointed actuary take account of the underlying exposure of the fund to assets by adopting a “look through” approach in respect of investment entities. For this purpose, an investment entity is an entity whose assets are solely investments, where the sole purpose of the entity is investment activities and where the investor investing in that entity has security directly linked to those assets.

- 6 *Transitional provisions:* For the initial calculation of Policy Liability, this Standard and the Valuation of Policy Liabilities Standard require that the appointed actuary employ the best estimate of the Policy Liability as if this Standard had been in force since the commencement of that policy.

#### **Part IV: Corrective Measures**

- 1 *Remedial measures and sanctions:* If a licence holder breaches any provision of this prudential standard in a flagrant manner that results, or threatens to result, in an unsafe or unsound condition or fails to comply with the instructions and reporting requirements, the Bank may pursue appropriate corrective actions and sanctions such as by imposing conditions, or varying conditions, on the holders licence as provided by Section 22 of the Act.
- 2 *Actuarial investigation and remedial action:* The appointed actuary of a licence holder is required by Sections 63, 102 and 104 of the Act to undertake actuarial investigation, report any contravention of requirements, and to put forward remedial action.

#### **Part V: Effective Date**

- 1 *Effective date:* The effective date of this prudential standard shall be 1 January 2005.

Questions relating to this prudential standard should be addressed to:

The Manager,  
The Financial Systems Supervision Department  
Bank of Papua New Guinea  
P.O Box 121  
Port Moresby  
N.C.D  
Telephone: 675 322 7200  
Fax: 675 321 4548

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**L. Wilson Kamit, CBE**  
**GOVERNOR**