BANK OF PAPUA NEW GUINEA

LIFE INSURANCE PRUDENTIAL STANDARD 4/2005

CAPITAL ADEQUACY STANDARD FOR LIFE INSURANCE COMPANIES

Arrangement of Paragraphs

Part I *Preliminary*

1 Authorization

2 Application

3 Definitions

Part II *Statement of Policy*

1 Purpose

2 Scope

3 Responsibility

Part III *Implementation and Specific Requirements*

1 Relationship of the Solvency and the Capital Adequacy Requirements

2 Determination of the Capital Adequacy Requirement

3 Current Termination Value

4 Management of risks associated with assets

5 Reserve for Inadmissible Assets

6 Resilience Reserve

7 New Business Reserve

8 Asset exposure

9 Transitional provisions

Part IV *Corrective Measures*

1 Remedial measures and sanctions

2 Actuarial investigation and remedial action

Part V *Effective Date*

1 Effective date

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 capital adequacy for life insurance in PNG. This Standard is the second 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 first tier is set out in the standard for solvency 3/2005. 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 there are sufficient assets in each statutory fund of a life company to provide adequate capital for the conduct of the business of the fund in accordance with this Act and in the interests of the owners of policies referable to the fund. This Standard requires that this measure be reported to the Bank but does not require that this Capital Adequacy position of the company be disclosed in the financial statements of the company or otherwise publicly disclosed.

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 this Standard for Capital Adequacy.

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 meaniful, 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.
New Business Capital:	Capital recognised within the context of the Capital Adequacy Standard as an appropriate offset against the new business capital requirements of the statutory fund.
New Business Reserve:	A component of the determination of the Capital Adequacy Requirement, which reflects any additional capital requirements of the statutory fund arising from future new business.
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 Capital Adequacy Standard is to prescribe the capital requirement of a statutory fund to ensure that the obligations to, and reasonable expectations of, policy owners and creditors are able to be met under a range of adverse circumstances, in the context of a viable ongoing operation.

This Standard requires that, at any time, the value of the assets of the statutory fund of a life company must be of an amount considered sufficient to allow the company to continue to meet, into the future, its obligations to, and the reasonable expectations of, policy owners referable to the fund; and obligations to creditors referable to the fund.

The appointed actuary, in determining the Capital Adequacy Requirement must consider, in respect of both existing and expected future policy owners, the company's liability in respect of the guaranteed benefits under the policy in accordance with the policy document; and any additional guarantees or obligations implied by the promotional material of the company; and the reasonable expectations of the policy owners in respect of benefits under the policy in accordance with past practice of the company.

The Capital Adequacy Requirement must be at least sufficient to ensure the ongoing solvency of the fund for the next three years, assuming future experience during that period in accordance with Best Estimate Assumptions (including best estimate levels of new business). Existing reserves in the statutory fund including the profit margins which are additional to the Best Estimate Liability, and the additional reserves which combine to meet the Solvency Requirement, are available to contribute towards the Capital Adequacy Requirement. The appointed actuary, in determining the Capital Adequacy Requirement, must make an assessment of the effect of the company's realistic new business plans on the future solvency of the statutory fund.

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 4/2005 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 industry requires that the level of security offered to policy owners exceed that of a standard that secures solvency. The Capital Adequacy Standard requires that the statutory fund have available capital sufficient to provide confidence in the longer term financial strength of the fund. A capitally adequate fund would have the ability to write new business, in an unfettered manner, with the expectation of remaining solvent into the future.

The Capital Adequacy Requirement is determined by considering the various risks which could impact the longer term security of the policy owners' entitlements, and requiring the provision of a prudent level of reserve against such risks.

These risks, and an assessment of the prudent provision, are considered in the context of an ongoing operation; a fund open to new business and meeting policy owner expectations in a competitive market. A statutory fund that meets the Capital Adequacy Requirement would be considered by the Bank to be a financially strong.

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

- the Capital Adequacy Liability;
- the Other Liabilities;
- the Resilience Reserve;
- the Inadmissable Assets Reserve; and

- the new Business Reserve.

The Capital Adequacy Liability is a measure of the value of the 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 capital adequacy 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 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: holdings in associated financial entities; and concentrated asset exposures. This Reserve is outlined further in Part III, section 3, of this Standard.

The New Business Reserve Provision for planned new business over a prescribed future period of three years, with the intention of securing the continued solvency of the fund over that period.

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 Capital Adequacy 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 capital adequacy assumptions.

The essential principle of this Standard is that the Capital Adequacy 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 to the Bank the processes and factors employed in calculations and projections for the Prudential Standards, including that for Capital Adequacy. 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 *Relationship of the Solvency and the Capital Adequacy Requirements:* Solvency and Capital Adequacy Requirements both provide for risk management of liabilities and assets. The greater the risks undertaken by a life insurer, the greater the solvency and capital adequacy capital required. The provision for solvency is intended to ensure that there are adequate funds in the event that a company has ceased writing new business. The provision for capital adequacy is intended to ensure that there are adequate funds to cover the obligations under existing and future policies as a going concern based on current business plans.

The risks taken into account in developing both standards include that for adverse experience for pricing of assumptions such as investment returns, expenses and claims, mismatch of assets and liabilities, and asset default arising from asset concentration and so on.

Risks taken into account only for the Solvency Standard are operating assets that are unlikely to be recoverable if the business ceases and fixed acquisition expenses which will continue to be incurred even if no new business is written.

Risks taken into account only for the Capital Adequacy Standard is that for sufficient capital to support planned new business levels for the next three years while remaining solvent.

If the Capital Adequacy Requirement is less than the Solvency requirement, the Solvency Requirement must be maintained.

2 *Determination of the Capital Adequacy Requirement:* This Standard requires that the Capital Adequacy 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 Capital Adequacy Requirement may be calculated as follows:

(a) CALCULATE CAPITAL ADEQUACY LIABILITY
For each policy in force, determine the Capital Adequacy Liability and sum across policies.

(b) CALCULATE CURRENT TERMINATION VALUE
For each policy in force, determine the Current Termination Value and sum across all policies.

(c) MINIMUM OF CURRENT TERMINATION VALUE
Determine the greater of the amount in (a) and the amount in (b) and aggregate across the statutory fund.

(d) ADD OTHER LIABILITIES
Increase the amount in (c) by the Other Liabilities of the statutory fund.

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

(f) ADD RESERVE FOR INADMISSABLE ASSETS
Increase the amount determined in (e) by the reserve for Inadmissible Assets for the statutory fund.

(g) ADD NEW BUSINESS RESERVE
Increase the amount determined in (f) by the additional capital requirements for new business of the statutory fund.

3 *Current Termination Value:* The Current Termination Value must be determined as the Termination Value on the reporting date. Where the Termination value is determined as the amount paid on voluntary termination, the Actuary must have regard for the reasonable expectations of policy owners based on the company's current practice at the reporting date. The Current Termination Value must not be less than the Minimum Termination Value.

If the company's obligation under the policy involves: deferred payment of the termination value; payments by instalment over a period; or payment in the form of an income stream; then the Termination Value must be determined as the present value of those future payments, using assumptions consistent with this Standard. If there is an unsettled lump sum insurance claim on a policy, the best estimate of the amount potentially payable should be counted as the Termination Value. Claims settlement costs such as medical evidence or potential legal costs of disputed claims should be taken into account if appropriate. Amounts payable should be reduced by potential reinsurance recoveries.

4 *Management of risks associated with assets:* This Standards 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.

5 *Reserve for Inadmissible Assets:* The Capital Adequacy Requirement must provide a reserve - the Inadmissible Assets Reserve - in respect of:

- 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 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 Capital Adequacy 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.

6 *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 must provide details of the calculation processes and the assumptions used in deriving the results.

7 *The New Business Reserve*: The New Business Reserve is determined as the additional amount required to ensure that the Solvency Requirement of the statutory fund will be able to be met over the next three years, allowing for capital emerging over that period from the existing business of the fund *less* the New Business Capital.

New Business Capital is the aggregate of:

- existing, binding arrangements for the external raising of capital specific to the financing of new business within the statutory fund; and
- capital (existing or emerging) in any other statutory fund which is in excess of the Capital Adequacy Requirements of that fund at that time; and
- Statutory Capital, to the extent not already committed in meeting the Expense Reserve requirements of the Solvency Standard.

The New Business Reserve must not be less than zero. Such Capital must not be recognised to the extent it would reduce the New Business Reserve below the level required to cover the Solvency Requirement of the statutory fund as at the reporting date.

8 *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.

9. *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:

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