BMA

BERMUDA MONETARY AUTHORITY

18th June 2014

NOTICE

Insurance (Prudential Standards) (Insurance Group Solvency Requirement) Amendment Rules 2014 (the "Rules")

The Bermuda Monetary Authority (the "Authority") proposes to amend Schedule VIIIA "Schedule of Long-Term Variable Annuity Guarantees - Internal Capital Model", to the Rules to require insurance groups to complete a memorandum which provides an overview of the group's approach to the following matters:

a. Required capital amount, key risks and risk mitigation techniques;
b. The business conducted and key product features;
c. Key risk exposures;
d. Approach used to calculate total assets and required capital;
e. Assumptions utilised;
f. Assumed and ceded reinsurance;
g. Hedging, including targets and business covered;
h. Risk mitigation arrangements other than hedging; and
i. Model output and capital results.

Comments on the Rules are invited by 5th September 2014 and should be sent to policy@bma.bm.

The Authority proposes for the aforementioned amendment to become effective as of 1st January 2015.

SCHEDULE VIIIA (Paragraph 6)

SCHEDULE OF LONG-TERM VARIABLE ANNUITY GUARANTEES – INTERNAL CAPITAL MODEL

[*blank*] name of Parent

as at [*blank*] (day/month/year)

All amounts are expressed in ______ (currency used)

The Schedule of long-term variable annuity guarantees – internal capital model – shall provide particulars of the following matters—

(a) Information for each section (if applicable)—

	(1)	(2)	(3)	(4)	(5)
	BSCR statutory reserve (000)	Policy count	Account value (000)	Guarantee value (000)	Net amount at risk (000)
By policy type:					
By number of years since issuance:					
By policy position (in the money vs. out of the money):					
By fund volatility:					
By number of years to next maturity **(for GMAB only)**:					

(b) The capital requirement based on the insurance group's internal capital model including—

Line Schedule No.	Description	(6) Without Hedging (000)	(7) With Hedging (000)
1	Internal model-based capital requirement		
2	Prescribed economic stress tests:		
	a) Equity – immediate shock of 20% to separate account funds		
	b) Absolute immediate increase of 10% in implied volatility		
	c) Interest rates – immediate		

	parallel shift up/down by 100bps		
3	Stresses to actuarial assumptions for mortality and policyholder behavior:		
	a) (Provide description)		
	b) (Provide description)		
	c) (Provide description)		
	d) (Provide description)		

c) An actuarial memorandum—The insurance group must file with the Authority an actuarial memorandum that should minimally include the particulars described below. When the information is already available in other documents within the Capital and Solvency Return, it is acceptable to attach those documents and simply make reference to them in the actuarial memorandum. The designated insurer of the insurance group should indicate any significant changes from the last memorandum filed with the Authority.

Line No.	Section	**Provide a brief summary or description of the following details under each section:**
1	Executive summary	Required capital amount and drivers of result; Key risks and associated risk mitigation techniques; and The modeling methods used.
2	Overview of business	Type of business; and Key product features and specifications.
3	Key risk exposures	Qualitative description of key risk exposures, such as economic, mortality, surrender, annuitisation, withdrawal, expense and counterparty risks.
4	Description of model	The approach used to calculate total assets and required capital; Key model details, including: - Source of asset and liability data; - Aggregations used to generate model cells; - Allocation of assets to variable annuity blocks; - The reserve basis; - Timestep of model (e.g. monthly); - The rate used to accumulate and discount cash flows; and - The treatment of interim solvency (e.g. how are periods of negative cash flows followed by positive cash flows allowed for).
5	Description of assumptions	Basis for economic scenarios, including underlying model and parameters; Information on the average return and volatility on the equity investment funds; For mortality and all policyholder behavior

		assumptions (e.g. premium payments, withdrawals, annuitizations, and lapses): - Source of data (e.g. company-specific experience); - Any margins for conservatism that were used; and - Any future mortality improvement; Approach to investment fund mapping; Insurer's crediting strategy; Expenses and commissions; Treatment of taxes; and Future management actions (other than hedging and reinsurance).
6	Reinsurance	Reinsurance (both assumed and ceded), including a list of counterparties; Nature of arrangements, including caps, floors and recapture provisions; The approach to modeling these arrangements; and Collateral requirements, if relevant.
7	Hedging	Business covered; Hedge target; Hedged parameters (i.e. Greeks) managed/monitored by the insurance group; Internal governance procedures; Currently-held derivatives and range of derivatives approved for trading; Unhedged exposures; Historical hedge effectiveness; Sample attribution reports; and How hedging is reflected in the determination of required capital and stress tests, including how any modeling limitations or simplifications are addressed.
8	Risk mitigation arrangements other than hedging	Business covered; Nature of arrangements; Internal governance procedures; and Other supporting details such as internal analyses, historical results, etc.
9	Results and model output	Capital results (summarised also in Line 1 of the Table under b)) and commentary; Results of stress tests (summarised also in Lines 2 and 3 of the Table under b)) with description and justification for tests selected and commentary on results; Sensitivity results for key assumptions/risk exposures; and The output from the model for a single

		scenario in the tail (e.g., that which most closely corresponds to the TVaR 95% result) showing cash flows by guaranteed rider type, accumulation and discounting of cash flows, and total assets required for that scenario.
10	Reviewer and signatory	The memorandum is required to be reviewed and signed by the Approved Actuary