



AMERICAN ACADEMY of ACTUARIES

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August 13, 2008

Larry Bruning, Chair, Life and Health Actuarial Task Force  
Leslie Jones, Vice Chair, Life and Health Actuarial Task Force  
National Association of Insurance Commissioners  
c/o John Engelhardt

Re: Company Generated Scenarios in VM-20

Dear Mr. Bruning and Ms. Jones:

The American Academy of Actuaries'<sup>1</sup> Life Financial Soundness/Risk Management Committee (also known as the SVL2 Steering Committee) believes that all principle-based approaches should allow for the option to use company-generated stochastic scenarios that meet required calibration criteria (i.e., for both separate account fund performance and interest rate scenarios). In order to accomplish this, the SVL2 Steering Committee recommends that the NAIC Life and Health Actuarial Task Force should reject proposed amendment VM-20\_080329\_004 (Proposed Amendment) which seeks to limit the source of stochastic scenarios to those developed by regulators (i.e., pre-packaged scenarios) in the *Requirements for Principle-Based Reserves for Life Products* (VM-20). The SVL2 Steering Committee believes the language in the March 29, 2008 exposure of VM-20 remains appropriate and will allow companies to better apply the objectives of a principle-based approach (PBA) in the development of reserves for life products.

The use of company-generated stochastic scenarios supported by appropriate calibration criteria will allow companies to better meet the concepts of a principle-based approach both now and in the long-term. In particular, companies will more effectively capture the risks associated with their specific contracts and will do so in a way that “utilizes risk analysis and risk management techniques to quantify the risks.” By using company-generated stochastic scenarios, companies will be “guided by the evolving practice and expanding knowledge in the measurement and management of risk” and will be allowed to incorporate “assumptions, risk analysis methods and models and management techniques that are consistent with those utilized within the company’s overall risk assessment process.”<sup>2</sup> For example, the calibration criteria for equities in C-3 Phase II contain not just gross wealth ratios (also known as calibration points), but also include guidance and requirements on the development of scenarios, including calibration of funds other than the S&P 500, the correlation of fund returns, the use of random number generators, the number of scenarios, efficiency in estimation, frequency of projection, time horizon, and the appropriateness of using the optional pre-packaged scenarios. The criteria also require the equity scenarios to be available in electronic format to facilitate review.

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<sup>1</sup> The American Academy of Actuaries’ mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

<sup>2</sup> All the quotes in this paragraph are from the 5/31/08 exposure of VM-00.

The sub-committees and work groups of the SVL2 Steering Committee have been very involved in the development of the provisions allowing for the optional use of company-generated stochastic scenarios, which are contained in the current exposure of VM-20 and in other PBA proposals. They have also been involved in the development of the calibration criteria that support these provisions. For example:

1. The provisions and calibration criteria are based on those contained in C-3 Phase II and proposed Actuarial Guideline VACARVM, which was the culmination of a three-year process, and included many discussions with, and much feedback from, members of LHATF.
2. The Academy's Economic Scenario Work Group (ESWG) has been working for over two years to develop guidelines that allow companies the option to use alternative interest rate scenario generators and is in the process of developing a recommendation for required calibration criteria.

To prohibit the use of company-generated stochastic scenarios would be going backwards, not forward.

The development of these provisions recognizes the fact that no single model is superior to others, that the science of stochastic modeling has and continues to evolve, and that principle-based approaches should encourage, and not hinder, that evolution. The SVL2 Steering Committee is not aware of any other jurisdictions that require companies to use only specific scenarios approved by the regulator in advance.

While the SVL2 Steering Committee believes the use of pre-packaged scenarios has its place in a PBA, we are concerned that by only allowing the use of a pre-packaged set of scenarios, the Proposed Amendment would require companies to rely on scenarios generated by a single (one set fits all) source. As with the application of the current reserve and risk-based capital systems to certain products, it is unlikely that these scenarios will work for all companies in all situations, and thus will increase the likelihood that material risks will be missed or misstated with reserves either under- or over-estimated. Here are some practical considerations:

1. The Academy's Life Capital Adequacy Subcommittee's June 2005 Report on C-3 Phase II stated, "The calibration criteria should permit a wide range of reasonable and popular models, provided such models are suitably parameterized. It is the calibration itself that establishes the 'common ground' and helps to narrow the range of acceptable practice without dictating the specific form of the model or parameters. Indeed, the shortcomings of simpler models can often be overcome by accepting certain compromises and adjusting the parameters."
2. The pre-packaged scenarios will not include scenarios for all indices to which companies map their funds and their assets. Asset classes affected by foreign exchange rates are not considered, nor are alternative asset classes. This will result in inaccurate modeling when scenarios for a given index are not available, necessitating a role for the NAIC in updating the scenarios.
3. The pre-packaged scenario sets are not all correlated and an approach to add correlation has not been developed. The use of required scenarios that lack correlation will be

particularly ineffective for companies with hedging programs in that they would be required to use models that are inconsistent with those used to implement the strategy.

4. Companies that employ hedging strategies often need to incorporate risk-neutral scenarios into their models. In order to value a dynamic hedging strategy (e.g., one supporting VUL guaranteed benefits), risk-neutral scenarios will likely be needed at future points within each real world scenario. As of each valuation date, a set of risk-neutral scenarios will be needed that validate to the current market value of the hedge assets. As the model projection rolls the hedge assets forward under a particular scenario, new risk-neutral scenarios will be needed at future points in time to revalue the hedge assets. The scenario generators used to develop the pre-packaged scenarios do not currently produce risk-neutral interest rate scenarios.
5. Models improve when there is a transparent flow of information. For example:
  - a. In the UK, the FSA has shared some of what it has learned in the review of financial firms' filings as its approach is to have the actuary defend assumptions through peer review.
  - b. The ESWG is currently analyzing calibration requirements for interest rate scenarios by soliciting a variety of interest rate generators and comparing them against the distribution of results from the 10,000 generated scenarios consistent with those that were presented to the NAIC in 2007.

Such approaches help both vendors and companies to incorporate new best practices into models and improve their risk management tools. This iterative improvement process becomes very difficult in an environment where companies are required to use pre-packaged scenarios.

6. Insurers provide a market for risk to be shared. Modelers provide a market for risk management tools. Allowing a variety of generators will encourage improvements to best practices by modelers, and this in turn improves the management of risk. By requiring only pre-packaged scenarios, this improvement process will be hindered. By allowing companies to generate their own scenarios with the appropriate calibration criteria, modelers will be encouraged to adapt and better understand the economic environment. While these models should not be considered predictive they are very instructive. These improvements help the user to better plan strategically for potential future scenarios. It's also important to consider that there is quite an advantage to have consistency between scenarios used to manage the business and those used for regulatory purposes.

One of the reasons given for desiring the exclusive use of a single set of scenarios is that it would assist in the review process, providing consistency between companies, assisting in checking for compliance, and helping in the comparison of the resulting reserves. The SVL2 Steering Committee understands the importance of these concerns, but believes they should not hinder the utilization and development of better tools and that they can be addressed by making the review process more uniform and streamlined. A standard reporting template with required illustrative tests, for example, could help further support the transparency of the calibration criteria. This

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could include elements of the deterministic reserve calculation and/or the deterministic scenarios associated with the stochastic exclusion test. Qualitative and even additional quantitative elements to the calibration criteria could also be added if needed. The SVL2 Steering Committee is willing to work with members of LHATF to address these issues.

In conclusion, the SVL2 Steering Committee believes that company-generated stochastic scenarios (i.e., for both separate account fund performance and interest rate scenarios) are not only a valuable part of a PBA, but are a necessary part of a principle-based approach and that their use should be encouraged rather than hindered. We are concerned that removing this aspect of the modeling process could result in a model that does not move forward to a more accurate reserve determination since it potentially overstates or understates the impacts of certain risks. The SVL2 Steering Committee does understand the complexities involved in these proposals and the affect this may have on the review process and is ready and willing to assist in addressing these concerns while allowing for the highest quality models.

Sincerely,

A handwritten signature in cursive script that reads "Donna R. Claire".

Donna Claire, Chair  
American Academy of Actuaries' Life Financial Soundness and Risk Management Committee

Cc: Peter Weber, Chair, LHATF PBR Life Subgroup