Life RBC (E) Working Group and Variable Annuities Capital and Reserve (E/A) Subgroup
Exposure 5/8/25

Questions for Commenters:

1. Regarding the GOES (E/A) SG referral to the LRBC (E) Working Group (slide 5, attached):
    a. Provide recommendations on any change to the C3 Phase I capital metric.
    b. Provide recommendations on any other methodology change, such as the minimum number of scenarios required.
    c. Please provide any other feedback.
2. Regarding the GOES (E/A) SG referral to the VACR (E/A) SG (slide 8, attached):
    a. Provide recommendations on any change to the C3 Phase II capital metric.
    b. Please provide any other feedback.
3. Please provide feedback on whether revisions to the C3 Phase I methodology to effectuate GOES should be postponed for year-end 2026 and how much time is preferred for capital planning purposes in advance of such changes going into effect.

Joint Call of the Life RBC (E) Working Group and the Variable Annuities Capital and Reserve (E/A) Subgroup

GOES C3 Phase I and Phase II Considerations

5/7/2025

Agenda

1. Limitations
2. Scenarios Used in Analysis
3. GOES (E/A) Subgroup Referral to Life RBC (E) Working Group
4. C3 Phase I Discussion
5. GOES (E/A) Subgroup Referral to Variable Annuities Capital and Reserve (E/A) Subgroup
6. C3 Phase II Discussion

Limitations

- The NAIC took steps to review the quantitative results for reasonableness. However, the accuracy and reliability of the results are ultimately dependent on the quality of participant submissions.
- For the 2024 GOES Field Test, standard templates were not used to collect results. This made the data across participants sometimes challenging to compare and some participants had to be removed from the analysis due to these challenges. Sometimes adjustments to the data were made in order to achieve comparability across the participants. This was more of a factor with the C3 Phase II results compared to the C3 Phase I results.
- The field test analytics (average C3 Factors, range of impacts, etc.) can be strongly dependent on a subset of the participants results.

Scenarios Used in Analysis

Field Test Run	Scenario Sets	Inforce Assets and Liabilities
Baseline **Already exists; no new runs needed.**	Scenario set(s) the company used for 12/31/23 statutory reporting of reserves and RBC	As of 12/31/23
Field Test 1 (FT1)	2024 GOES Field Test scenarios as of 12/31/23	As of 12/31/23
Current Revised GOES Scenarios	2024 GOES Field Test calibration with revisions to the: 1) initial yield curve fitting methodology; 2) a dynamic generalized fractional floor (DGFF); and 3) a revised equity calibration with 1st percentile gross wealth factors (GWFs) that more closely align with acceptance criteria. Scenarios produced as of 12/31/23.	As of 12/31/23

Referral to Life RBC (E) Working Group

The GOES (E/A) Subgroup has been working to implement a new economic scenario generator for use in statutory reserve and capital calculations for life insurance and annuities. It is planned that the new economic scenario generator will be effective for C3 Phase I and C3 Phase II for year-end 2026. To facilitate the implementation of the new economic scenario generator, the GOES (E/A) Subgroup requests that the Life Risk-Based Capital (E) Working Group:

1. Implement the necessary changes to the Life Risk-Based Capital Blanks and Instructions,
2. Coordinate with the Variable Annuities Capital and Reserve (E/A) Subgroup on recommended changes to the C3 Phase II calculation,
3. Consider changes to the required number of scenarios for the C3 Phase I calculation, if necessary, and,
4. Consider changes to the capital metric for the C3 Phase I calculation, if necessary.

The Subgroup appreciates the Working Group's assistance on this issue and looks forward to the response.

C3 Phase I Background

Calculation Details

- Cash flow models that are used for asset adequacy analysis (or other consistent models) are used. The greatest present value of a deficiency at any point in the projection is calculated for each scenario.
- 50 or 12 interest rate scenarios generated from an older version of the Academy Interest Rate Generator (AIRG) are used in the calculations. The 50 or 12 scenarios are selected from a larger 200 set and are meant to contain the most adverse scenarios so that a tail measure metric can be calculated with a smaller number of scenarios.
- This version of the AIRG has a 6.55% interest rate mean reversion parameter (MRP) which does not change, compared with the current version of the AIRG which has a dynamic MRP that resets annually based on a weighted average of past interest rate levels.
- From the 50-scenario set, a weighted average centered around the 95th percentile scenario is determined, and that is the C3 RBC amount.
- In the C3 Phase I RBC worksheet, the scenario level and final results are also shown as a "C3 Factor" percentage, which is the capital amount divided by the statutory reserve at the start of the projection.

Product Scope

- **Deferred and Immediate Annuities**
- **Guaranteed Separate Accounts***
- **Guaranteed Investment Contracts**
- **Single Premium Life**
- **Excludes Indexed and Variable Products**

C3 Phase I Metric →

(a) For the 50 scenario set, the C-3 scores are multiplied by the following series of weights:

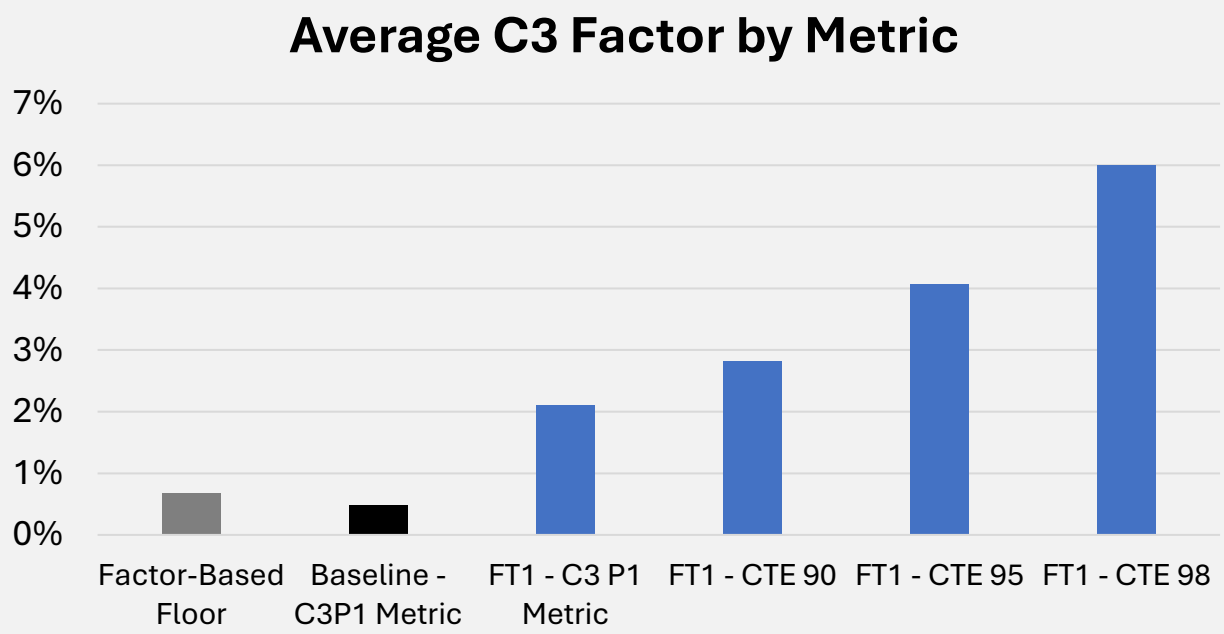
Weighting Table

Scenario Rank:	17	16	15	14	13	12	11	10	9	8	7	6	5
Weight:	0.02	0.04	0.06	0.08	0.10	0.12	0.16	0.12	0.10	0.08	0.06	0.04	0.02

* excluding guaranteed indexed separate accounts following a Class II investment strategy

2024 GOES Field Test C3 Phase I Results by Metric

- **13/16** company model segments had "factor-based floor" amounts greater or equal to their model determined C3 factors for the Baseline run using the current weighted average metric, compared to **11/16** company model segments had "factor-based floor" amounts greater or equal to their model determined C3 factors using the 2024 GOES FT1 scenarios. However, the average model determined C3 factor increased from **0.483%** to **2.098%** due to outlier model segments.
- The average C3 factor using CTE 90 increased to **2.821%** using the GOES 2024 FT1 scenarios compared to the **2.098%** for the current metric, but still **11/16** company model segments had "factor-based floor" amounts greater or equal to their model determined C3 factors and the CTE 90 metric.



Statistics	Factor-Based Floor	C3 Phase I Metric		CTE90		CTE 95		CTE 98	
		B1	FT1	B1	FT1	B1	FT1	B1	FT1
25th Percentile	0.467%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.038%
Median	0.697%	0.000%	0.360%	0.079%	0.134%	0.079%	0.723%	0.397%	2.060%
75th Percentile	0.874%	0.398%	2.648%	1.928%	3.209%	1.002%	3.612%	2.814%	5.102%
Average Factor*	**0.666%**	**0.483%**	**2.098%**	**0.801%**	**2.821%**	**0.660%**	**4.072%**	**1.833%**	**6.000%**
Count	16	19	19	12	18	11	16	12	18

*simple average

Referral to Variable Annuities Capital and Reserve (E/A) SG

The GOES (E/A) Subgroup has been working to implement a new economic scenario generator for use in statutory reserve and capital calculations for life insurance and annuities. It is planned that the new economic scenario generator will be effective for C3 Phase II for year-end 2026. One of the goals of the project to implement the GOES has been to consider whether changes to reserve and/or capital metrics are necessary in light of the new scenarios. To facilitate the implementation of the new economic scenario generator, the GOES (E/A) Subgroup requests that the Variable Annuities Capital and Reserve (E/A) Subgroup:

1. Consider changes to the capital metric for the C3 Phase II calculation, if necessary, and,
2. Coordinate with the Life Risk-Based Capital (E) Working Group on any changes to the C3 Phase II metric and any related changes to the Life Risk-Based Capital Blanks and Instructions.

The GOES (E/A) Subgroup appreciates the Variable Annuities Capital and Reserve (E/A) Subgroup's assistance on this issue and looks forward to the response.

C3 Phase II Background

Calculation Details

- CTE 98 is determined one of two ways:
  - If using the Macro Tax Adjustment (MTA), federal income tax is ignored in the modeled cash flows. As a result, for each individual scenario, the numerical value of the scenario reserve used in this calculation should be identical to that for the same scenario in the Aggregate Reserve calculation under VM-21.
  - If using Specific Tax Recognition, CTE After-tax (CTEAT) 98 is calculated using a model that is directly reflective of tax cashflows.
- From there, the C3 RBC Amount is:
  - If using the MTA:
    - 25% x ((CTE (98) + Additional Standard Projection Amount – Statutory Reserve) x (1 – Federal Income Tax Rate) – (Statutory Reserve – Tax Reserve) x Federal Income Tax Rate
  - If using STR:
    - 25% x (CTEAT (98) + Additional Standard Projection Amount – Statutory Reserve)

2024 GOES Field Test C3 Phase II Results by Metric

Statistics	Baseline CTE98/Baseline CTE70 -1	FT1 CTE 70/Baseline CTE70 -1	FT1_CTE90/FT1_CTE70-1	FT1_CTE95/FT1_CTE70-1	FT1_CTE98/FT1_CTE70-1
25th Percentile	0.50%	0.05%	0.22%	0.85%	1.38%
Median	1.48%	0.21%	0.69%	1.59%	3.14%
75th Percentile	2.91%	0.33%	1.35%	2.39%	3.66%
Weighted Average	**1.63%**	**0.55%**	**0.76%**	**1.58%**	**2.53%**

- The table above shows summarized 2024 GOES Field Test data across 8 model segments from six different field test participants. The averages shown were weighted by baseline CTE 70 amount.
- The CTE 70 and CTE 98 amounts include the cash value.
- The Baseline CTE 98 was **1.63% greater** than the Baseline CTE 70 amount.
- Comparing the CTE 70 from FT1 to that of the Baseline, the ratio of the FT1 CTE 70 was **0.55%** greater.
- Alternative metrics were compared to the FT1 CTE 70 amount, with the following results:
  - FT1 CTE 90 was **0.76% greater**
  - FT1 CTE 95 was **1.58% greater**
  - FT1 CTE 98 was **2.53% greater**

Variable Annuity Model Office Results by Metric

- Unfloored, VM-21 adjusted model office results are shown for three different cohorts:
  - New Business, Weak Guarantee, In-the-money
  - New Business, Strong Guarantee, Out-the-money
  - Mature Business, Strong Guarantee, At-the-money
- The potential capital metrics (CTE90, CTE 95, and CTE 98) were higher using the Current Revised GOES scenarios compared to those produced using the AIRG. The differences got wider with higher confidence levels.
- When comparing the potential capital metrics to their respective CTE 70 amount (AIRG or Revised GOES Scenarios), CTE 95 for the Revised GOES Scenarios was more consistent with the current CTE 98 metric used with the AIRG.

Unfloored, Adjusted Results by Metric

New Weak ITM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	86,782,233	93,802,216	8.09%	97,074,573	11.86%	100,784,003	16.13%
Current Revised GOES Scenarios	85,327,307	94,375,628	10.60%	100,329,626	17.58%	109,371,008	28.18%
Revised Scenarios vs AIRG	-1.68%	0.61%		3.35%		8.52%	

New Strong OTM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	84,951,284	90,714,237	6.78%	93,488,137	10.05%	96,473,555	13.56%
Current Revised GOES Scenarios	83,804,603	91,050,692	8.65%	96,158,612	14.74%	103,396,668	23.38%
Revised Scenarios vs AIRG	-1.35%	0.37%		2.86%		7.18%	

Mature Strong ATM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	92,803,482	96,793,955	4.30%	99,081,186	6.76%	101,958,674	9.87%
Current Revised GOES Scenarios	92,455,849	97,970,909	5.97%	101,897,993	10.21%	107,823,623	16.62%
Revised Scenarios vs AIRG	-0.37%	1.22%		2.84%		5.75%	

Variable Annuity Model Office Results by Metric

Unfloored, Adjusted Results by Metric **in Excess of Cash Value**

New Weak ITM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	0	0	NA	3,074,573	NA	6,784,003	NA
Current Revised GOES Scenarios	0	375,628	NA	6,329,626	NA	15,371,008	NA
Revised Scenarios vs AIRG	NA	NA		105.87%		126.58%	

CSV	94,000,000

New Strong OTM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	0	0	NA	0	NA	2,473,555	NA
Current Revised GOES Scenarios	0	0	NA	2,158,612	NA	9,396,668	NA
Revised Scenarios vs AIRG	NA	NA		NA		279.89%	

CSV	94,000,000

Mature Strong ATM	CTE70	CTE90	CTE90/CTE70	CTE95	CTE95/CTE70	CTE98	CTE98/CTE70
AIRG	0	0	NA	0	NA	2,004,674	NA
Current Revised GOES Scenarios	0	0	NA	1,943,993	NA	7,869,623	NA
Revised Scenarios vs AIRG	NA	NA		NA		292.56%	

CSV	99,954,000