Draft: 12/1/25

Longevity Risk (E/A) Subgroup
Virtual Meeting
November 19, 2025

The Longevity Risk (E/A) Subgroup of the Life Risk-Based Capital (E) Working Group and Life Actuarial (A) Task Force met Nov. 19, 2025. The following Subgroup members participated: Seong-min Eom, Chair (NJ); Lei Rao-Knight (CT); Mike Yanacheak (IA); Ben Slutsker (MN); William B. Carmello (NY); Peter Weber (OH); Rachel Hemphill (TX); and Tomasz Serbinowski (UT).

1. Discussed Detailed Longevity Reinsurance Proposals

Linda Lankowski (American Academy of Actuaries—Academy) noted that the Academy's proposal (Attachment Eleven-A) is based on modeling a mortality stress scenario and subtracting the reserves. The stress scenario would be based on a shock to the mortality improvement or the overall mortality. Lankowski noted that while shocks would need to be calibrated, the proposal does not expect companies to perform complicated projection modeling.

Brian Bayerle (American Council of Life Insurers—ACLI) said the ACLI's proposal (Attachment Eleven-B) recommended using the present value of benefits from the model, then multiplying it by the current C-2 factors found in the 2025 risk-based capital (RBC) instructions until updated factors are recommended by the Academy. The ACLI's proposal includes an offset to account for premium and fees that were not used for reserving purposes due to the floor of the reserves. Bayerle said the proposal accounts for business issued prior to VM-22, Requirements for Principle-Based Reserving for Non-Variable Annuities, in which case the companies would use the offset from their cash-flow testing model. For business issued under VM-22, the offset would come from the VM-22 principle-based reserving (PBR) model.

Hemphill questioned whether the ACLI's proposal creates a materiality issue because, in the PBR model, that may have been treated as immaterial but would be material in terms of C-2. She noted that if so, there may need to be an update to PBR for how materiality is handled. Bayerle said he would take the question back to the ACLI to discuss the potential need for materiality changes due to the different purposes.

Slutsker provided an overview of Minnesota's proposal, which he presented during the Subgroup's Oct. 9 meeting. He said Minnesota's approach asks a philosophical question about moving to a principles-based capital approach, similar to C-3 for market risk. He noted that the approach does not use the current C-2 factors or look at the VM-22 reserves.

Serbinowski asked how Minnesota views its proposal in relation to the Academy calculation and whether the approach would consider using the Academy's shock approach instead of the 1% or 2% used as a placeholder in Minnesota's proposal. Slutsker said the Academy's proposal to use the total asset requirement minus the statutory reserve made sense, and the shock for the mortality under Minnesota's proposal could be consistent with the shocks proposed by the Academy.

Lankowski asked for clarification regarding the conditional tail expectation (CTE) 90 and CTE 70 calculations in Minnesota's proposal. She asked Slutsker to confirm there were no investment shocks that would cause double-counting. Slutsker confirmed that the only shocks are with respect to mortality.

Eom stated that New Jersey's proposal (Attachment Eleven-C) was similar in structure to the ACLI's proposal but used a different set of C-2 factors. Eom said the proposed factors were based on the sensitivities New Jersey had run. She said she planned to provide the analysis for discussion at the Fall National Meeting. Gary Hu (Prudential) asked whether New Jersey's proposal used the total reserve or the reserve floor. Eom said the proposal used the reserve floor that is multiplied by the proposed factor(s).

2. Discussed the Adoption Timeline

Eom said the four proposals will be discussed and exposed in more detail to the broader Life Actuarial (A) Task Force audience at the Fall National Meeting to maintain the timeline for 2026 adoption. Amy Fitzpatrick (NAIC) provided an overview of the timeline and said that due to the structural changes required for all methods, the Subgroup should submit the recommendation to the Life Risk-Based Capital (E) Working Group by March 1, 2026.

Having no further business, the Longevity Risk (E/A) Subgroup adjourned.

SharePoint/NAIC Support Staff Hub/Member Meetings/A CMTE/LATF/2025-3 Fall/LongevitySG/11 19/Nov 19_LongevitySG.docx

November 14, 2025

Seong-min Eom, Chair,
Longevity Risk (E/A) Subgroup
National Association of Insurance Commissioners

Re: Request for Longevity Reinsurance C2 Proposal and LR025-A redline.docx

Dear Chair Eom:

On behalf of the Longevity Risk Task Force (the Task Force) of the American Academy of Actuaries,[1] I am sharing some feedback regarding a framework for the RBC C-2 charge for longevity reinsurance.

Product Background

Longevity reinsurance transactions are structured agreements between ceding companies and assuming companies designed to transfer the risk associated with annuitants living longer than expected.

These contracts typically include fixed premiums and fees, based on a mortality basis specified in the contract. These fixed premiums and fees *do not vary* with the survival experience of annuitants. The longevity benefits (the "floating" leg) under these transactions, depend on the actual survival experience of the covered annuitants. As more annuitants live beyond projected life expectancies, the reinsurer's obligation to pay benefits extends beyond original expectations.

For many of these contracts, the fixed premiums and fees are larger than the payable longevity benefits, especially in the early years of the contract. This sufficiency can result in a portion of the fixed premiums and fees not being recognized in reserves.

Academy's Proposal

Following up from the Academy's letter sent on September 15, 2025, and reviewing the proposals from Minnesota, New Jersey, and the ACLI, the LRTF proposes a principle-based Total Asset Requirement (TAR) approach to determining the C-2 Longevity Reinsurance capital charge, which will be discussed below. Our proposal discusses two items, 1) structure of the capital charge and 2) calibration of longevity shock. Due to the tight timeframe, we prioritized the structure of the capital charge. We are unable to recommend a specific calibration of longevity shocks and will be happy to discuss calibration at a future date.

1. *Structure of the capital charge:* The LRTF recommends a principle-based approach where the total required assets (i.e., the TAR) required to support liabilities under an

[1] The American Academy of Actuaries is a 20,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 60 years, the Academy has assisted 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.

appropriate stress scenario is determined, and the capital charge is calculated to be the excess of the TAR over the reserves, subject to a floor of zero.

We propose the following structure for a TAR-based framework:

- Project future premiums & reinsurance fees
- Project future benefits and expenses using a mortality shock appropriately calibrated
- Calculate TAR as present value of shocked future benefits and expenses minus present value of premiums & fees
- C-2 for Longevity Reinsurance risk = maximum {TAR – Statutory Reserve, 0}
- Companies would be required to perform this calculation on an annual basis to determine the capital amount

2. *Calibration of longevity risk shock:* An appropriate stress scenario should follow the same principles as the stresses developed for current C-2 Longevity. Those principles are 1) calibrating shocks to 95th percentile relative to 85th percentile (standard for reserves) and 2) independence of mortality improvement and mortality level shocks. Further analysis would be needed before providing any additional recommendations on matters including the appropriateness of applying the existing mortality improvement and mortality shocks to longevity reinsurance and/or whether these same shocks would or would not be appropriate for contracts covering non-U.S. lives.

If there are any questions or if the Subgroup would like to discuss these comments or the example further, please contact Amanda Barry-Moilanen, the Academy's life policy project manager (barrymoilanen@actuary.org).

Sincerely,

Linda Lankowski, MAAA, FSA
Chairperson, Longevity Risk Task Force
American Academy of Actuaries

Brian Bayerle
Chief Life Actuary
202-624-2169

Colin Masterson
Sr. Policy Analyst
202-624-2463

November 17, 2025

Seong-min Eom
Chair, NAIC Longevity Risk (E/A) Subgroup

Re: October 2025 Request for Longevity Reinsurance C-2 Proposal and LR025-A

Dear Chair Eom:

The American Council of Life Insurers (ACLI) appreciates the opportunity to provide additional commentary on the NAIC Longevity Risk (E/A) Subgroup's effort to develop Life Risk Based Capital Longevity Risk C-2 factor(s) for longevity reinsurance business. We would also like to take this time to thank regulators, NAIC staff, and other interested parties for the robust dialogue and proposals which have already been put forth and discussed at the October 9th Subgroup meeting.

As previously stated in our comments from September 15th, ACLI continues to support applying the C-2 factor to the present value of benefits, with an offset credit for future surplus not included in calculated statutory reserves. Specifically, our approach boils down to:

- C-2 capital = Max (0, A - B), where
  - A = C-2 factor * PV Benefits (or floating leg) (i.e., the Statement Value), and
  - B = PV Premiums + Fees (or fixed leg) not already used for reserving purposes (i.e., the Offset Credit, which should also include investment and expense considerations).

Accompanying this comment letter, ACLI has provided redlined edits to LR025-A and an illustrative spreadsheet demonstrating the calculation. If there are any questions about the materials we provided, please do not hesitate to reach out to ACLI staff.

Thank you all once again and we look forward to additional discussion soon.

Sincerely,

B Bayerle Colin Masterson

cc: Amy Fitzpatrick, NAIC

American Council of Life Insurers | 300 New Jersey Avenue, NW, 10th Floor | Washington, DC 20001

LR025-A LONGEVITY RISK

Longevity Risk (E/A) Subgroup Exposure 10/16/25:

Exposed for 30-day comment period ending November 14, 2025.

Please submit detailed proposals or any comments for approaches to developing Life Risk Based Capital Longevity Risk C-2 factor(s) for longevity reinsurance business. The Subgroup is seeking development of specific C-2 factor values with deep technical analysis.

Proposals should include as applicable to the approach:

- Detailed descriptions of how to calculate the value where the proposed C-2 factor will be applied, including how an offset credit for future surplus not included in calculated statutory reserves is reflected in the approach, if such descriptions are not provided in the proposal (e.g. present value of benefits, with an offset credit for future surplus not included in calculated statutory reserves, as proposed by American Council of Life Insurers or a principle-based TAR approach suggested by the American Academy of Actuaries) to be reported in a new line in LR025-A.
- A redline of LR025-A and the accompanying instructions to illustrate how the proposed approach would be reported. Add new lines and columns as applicable (see next three pages).
- For principle-based C-2 factors include a redline of LR025-A to show how the company should report the factor as well as how the final calculation of the longevity requirement amount should be performed since the factors will differ between longevity reinsurance and other in scope products.

Note: Other exhibits use LR025-A Lines 5, Column 2 values therefore any structural changes to LR025-A may require non-structural changes to the following:

- LR030, CALCULATION OF TAX EFFECT FOR LIFE AND FRATERNAL RISK-BASED CAPITAL – Line 138b Longevity C-2 Risk, Source column
- LR031, CALCULATION OF AUTHORIZED CONTROL LEVEL RISK-BASED CAPITAL – Line 48b Longevity Risk, Source column

LR025-A LONGEVITY RISK

		Annual Statement Source	(1) Statement Value		Factor		(2) Requirement
	Life Contingent Annuity Reserves Excluding Longevity Reinsurance						
(1)	General Account Life Contingent Annuity Reserves	Exhibit 5 Column 2 Line 0299999, in part‡	$0				
(2)	General Account Life Contingent Supplemental Contract Reserves	Exhibit 5 Column 2 Line 0399999, in part‡	$0				
(3)	General Account Life Contingent Miscellaneous Reserves	Exhibit 5 Column 2 Line 0799999, in part‡	$0				
(4)	Separate Account (SA) Life Contingent Annuity Reserves	S/A Exhibit 3 Column 2 Line 0299999, in part‡	$0				
(5)	Total Life Contingent Annuity Reserves Excluding Longevity Reinsurance	Lines (1) + (2) + (3) + (4)	$0	X	†	=	$0
	Longevity Reinsurance						
(6)	Present Value of Longevity Reinsurance Benefits	Company Records (enter a pre-tax amount)	$0	X	†		$0
(7)	Reduction in RBC for ~~Cash Flow Components in Excess of Benefits~~Discounted Accumulated Sufficiency	Company Records (enter a pre-tax amount)					$0
(8)	Total Longevity Reinsurance	If Line (6) > Line (7), then Line (6) - Line (7), else 0					$0
(9)	Total Life Contingent Annuity Reserves	Lines (5) + (8)					$0

† The tiered calculation is illustrated in the Longevity Risk section of the risk-based capital instructions.
‡ Include only the portion of reserves for products in scope per the instructions

Denotes items that must be manually entered on the filing software.

LR025-A LONGEVITY RISK

- LR030, CALCULATION OF TAX EFFECT FOR LIFE AND FRATERNAL RISK-BASED CAPITAL – Line 138b Longevity C-2 Risk, Source column

		Source	RBC Amount	Tax Factor	RBC Tax Effect
(138b)	Longevity C-2 Risk	LR025-A Longevity Risk Column (2) Line (~~95~~)		0.2100	

- LR031, CALCULATION OF AUTHORIZED CONTROL LEVEL RISK-BASED CAPITAL – Line 48b Longevity Risk, Source column

		Source	RBC Requirement
(48b)	Longevity C-2 Risk	LR025-A Longevity Risk Column (2) Line (~~95~~)	

LONGEVITY RISK

LR025-A

Basis of Factors

The factors chosen represent surplus needed to provide for claims in excess of reserves resulting from increased policyholder longevity calibrated to a 95th percentile level. For the purpose of this calibration aggregate reserves were assumed to provide for an 85th percentile outcome.

Longevity risk was considered over the entire lifetime of the policies since these annuity policies are generally not subject to repricing. Calibration of longevity risk considered both trend risk based on uncertainty in future population mortality improvements, as well as level or volatility risk which derives from misestimation of current population mortality rates or random fluctuations. Trend risk applies equally to all populations whereas level and volatility risk factors decrease with larger portfolios consistent with the law of large numbers.

Except for longevity reinsurance, ~~S~~statutory reserve was chosen as the exposure base as a consistent measure of the economic exposure to increased longevity. Factors were also scaled by reserve level since number of insured policyholders is a less accessible measure of company specific volatility risk. Factors provided are pre-tax and were developed assuming a 21% tax adjustment would be subsequently applied.

For longevity reinsurance, the present value of benefits offers a more consistent measure of risk exposure than statutory reserves. The excess of the remainder of the cash flows (premiums, fees, investment income, and expenses) exceeding benefits should be considered as offsets to the charge when these items are not reflected elsewhere in the statutory reserve framework. Specifically, for longevity reinsurance under Principle-Based Reserving (PBR), the reduction in RBC equals the greater of the negative of the unfloored calculated reserve and 0. For longevity reinsurance not under PBR, the reduction in RBC should be the excess of the aforementioned cash flows over benefits using the company's Cash Flow Testing model on a standalone basis.

LR025-A LONGEVITY RISK

Specific Instructions for Application of the Formula

Excluding longevity reinsurance, a~~A~~nnual statement reference is for the total reserve for the products in scope. The scope includes annuity products with life contingent payments where benefits are to be distributed in the form of an annuity. The entire reserve amount for contracts in scope that include any life contingent payments are in scope. For example, under a certain-and-life style annuity, the entire reserve for both the certain payments and life contingent payments are in scope. Variable immediate annuity reserves under VM-21 are also in scope where there are life contingent payments. Scope does not include annuity products that are not life contingent, or deferred annuity products where the policyholder has a right but not an obligation to annuitize. A certain-and-life style annuity, where only certain payments remain (such as following the death of the annuitant), is out of scope. Variable deferred annuity contract reserves under VM-21 are out of scope, including reserves valued under VM-21 for any contracts where policyholder account value has reached zero, but a lifetime benefit may still be payable by the insurer. Line (3) for General Account Life Contingent Miscellaneous reserves is included in the event there are any reserves for products in scope reported on Exhibit 5 line 0799999; it is not meant to include cash flow testing reserves reported on this line. Included in scope are:

- Single Premium Immediate Annuities (SPIA) and other payout annuities in pay status
- Deferred Income Annuities which will enter annuity pay status in the future
- Structured Settlements for annuitants with any life contingent benefits
- Group Annuities, such as those associated with pension liabilities with both immediate and deferred benefits

The total reserve exposure is then further broken down by size as in a tax table. This breakdown will not appear on the RBC filing software or on the printed copy, as the application of factors to reserves is completed automatically. The calculation is as follows:

Line (5)	Life Contingent Annuity Reserves Excluding Longevity Reinsurance	(1) Statement Value	Factor	(2) RBC Requirement
	First 250 Million		X 0.0171 =	
	Next 250 Million		X 0.0108 =	
	Next 500 Million		X 0.0095 =	
	Over 1,000 Million		X 0.0089 =	

	Total Life Contingent Annuity Reserves Excluding Longevity Reinsurance		

For Longevity Reinsurance, the company modeling of benefits is the basis for the statement value. Specifically, the statement value should be the present value of benefits from an appropriate model. For longevity reinsurance that is being reserved under PBR, the present value of benefits should come from their PBR model. For longevity reinsurance that is not being reserved under PBR, the company should use their Cash Flow Testing model.

The present value of benefits exposure is then further broken down by size as in a tax table. This breakdown will not appear on the RBC filing software or on the printed copy, as the application of factors to present value of benefits is completed automatically. The calculation is as follows:

Line (6)	Present Value of Longevity Reinsurance Benefits~~Longevity Reinsurance~~	Statement Value	Factor	RBC Requirement
	First 250 Million		X 0.0171 =	
	Next 250 Million		X 0.0108 =	
	Next 500 Million		X 0.0095 =	
	Over 1,000 Million		X 0.0089 =	
	Present Value of Longevity Reinsurance Benefits~~Total Life Contingent Annuity Reserves Excluding Longevity Reinsurance~~			

Line (7)

There is a reduction in RBC for the discounted accumulated sufficiency at the end of the projection to the valuation date ~~excess of ther~~reflecting the remainder of the cash flows (premiums, fees, investment income, ~~and~~ less benefits and expenses~~) exceeding benefits that are not reflected elsewhere in the statutory reserve framework~~. For longevity reinsurance that is being reserved under PBR, the present value of premiums, fees, investment income, less benefits and expenses should come from the company's PBR model; this should result in the reduction in RBC equaling the greater of the negative of the unfloored calculated reserve and 0.

For longevity reinsurance that is not being reserved under PBR, the present value of premiums, fees, investment income, less benefits and expenses should come from the company's Cash Flow Testing model ~~to the extent those cash flows are not supporting the sufficiency of the testing~~. The reduction in RBC should be the excess of the aforementioned cash flows over benefits using the company's Cash Flow Testing model on a standalone basis.

The amount ultimately included in the authorized control level will be subject to a guardrail factor of 0_and a correlation factor of -.25.

NJ Proposal for Longevity Reinsurance C-2 Factor Development.

The proposed methodology is to develop the Life RBC C-2 Longevity Risk factor for Longevity Reinsurance, as the product of quantities Factor and Base, as defined below:

- **Factor** – A scalar factor (currently factors ranging from 5.0 to 9.607 are being considered, varying based on the size of the total reserves).
- **Base** – is set equal to the floor used in the PBR VM-22 reserve calculations (the floor is currently set equal to 2% of the benefits payable within the 12 months, following the valuation date).

Notes:

1. Factor will be selected such that the product of Factor x Base will approximate the impact of the 95th percentile mortality and mortality improvement shock over the 85th percentile of mortality and mortality improvement shock, on an after-tax basis.
2. The rationale for selecting the statutory reserve floor as the base is that:
    a. the reserves tend to start out very small (often at the reserve floor level referenced above), then grow substantially higher; while the impact of mortality and mortality deterioration tends to be proportional to liabilities only (not the reserves) and
    b. as the block of business matures, this would be consistent with higher volatility of the runoff business (when the volumes become small) and lack of credible older age mortality data.
3. Once the Factor is set, it won't be updated unless there are material changes in the mortality level and mortality trend patterns, or longevity reinsurance market distribution (e.g., expansion of the longevity reinsurance market to other countries).

LR025-A LONGEVITY RISK

Longevity Risk (E/A) Subgroup Exposure 10/16/25:

Exposed for 30-day comment period ending November 14, 2025.

Please submit detailed proposals or any comments for approaches to developing Life Risk Based Capital Longevity Risk C-2 factor(s) for longevity reinsurance business. The Subgroup is seeking development of specific C-2 factor values with deep technical analysis.

Proposals should include as applicable to the approach:

- Detailed descriptions of how to calculate the value where the proposed C-2 factor will be applied, including how an offset credit for future surplus not included in calculated statutory reserves is reflected in the approach, if such descriptions are not provided in the proposal (e.g. present value of benefits, with an offset credit for future surplus not included in calculated statutory reserves, as proposed by American Council of Life Insurers or a principle-based TAR approach suggested by the American Academy of Actuaries) to be reported in a new line in LR025-A.
- A redline of LR025-A and the accompanying instructions to illustrate how the proposed approach would be reported. Add new lines and columns as applicable (see next three pages).
- For principle-based C-2 factors include a redline of LR025-A to show how the company should report the factor as well as how the final calculation of the longevity requirement amount should be performed since the factors will differ between longevity reinsurance and other in scope products.

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- LR031, CALCULATION OF AUTHORIZED CONTROL LEVEL RISK-BASED CAPITAL – Line 48b Longevity Risk, Source column

LR025-A LONGEVITY RISK

			(1)				(2)
		Annual Statement Source	Statement Value		Factor		Requirement
	Life Contingent Annuity Reserves						
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(3)	General Account Life Contingent Miscellaneous Reserves	Exhibit 5 Column 2 Line 0799999, in part‡	$0				
(4)	Separate Account (SA) Life Contingent Annuity Reserves	S/A Exhibit 3 Column 2 Line 0299999, in part‡	$0				
(5)	Total Life Contingent Annuity Reserves	Lines (1) + (2) + (3) + (4)	$0	X	†	=	$0
			========				==========

† The tiered calculation is illustrated in the Longevity Risk section of the risk-based capital instructions.
‡ Include only the portion of reserves for products in scope per the instructions

Denotes items that must be manually entered on the filing software.

LONGEVITY RISK

LR025-A

Basis of Factors

The factors chosen represent surplus needed to provide for claims in excess of reserves resulting from increased policyholder longevity calibrated to a 95th percentile level. For the purpose of this calibration aggregate reserves were assumed to provide for an 85th percentile outcome.

Longevity risk was considered over the entire lifetime of the policies since these annuity policies are generally not subject to repricing. Calibration of longevity risk considered both trend risk based on uncertainty in future population mortality improvements, as well as level or volatility risk which derives from misestimation of current population mortality rates or random fluctuations. Trend risk applies equally to all populations whereas level and volatility risk factors decrease with larger portfolios consistent with the law of large numbers.~~.~~

For non-Longevity Reinsurance products s~~S~~tatutory reserve was chosen as the exposure base as a consistent measure of the economic exposure to increased longevity. For Longevity Reinsurance products statutory reserve floor (as defined in VM-22) was chosen as the exposure base which lines up with the economic exposure to increased longevity than VM-22 reserves. Factors were also scaled by reserve level since number of insured policyholders is a less accessible measure of company specific volatility risk. Factors provided are pre-tax and were developed assuming a 21% tax adjustment would be subsequently applied.

Specific Instructions for Application of the Formula

Annual statement reference is for the total reserve for the products in scope. The scope includes annuity products with life contingent payments where benefits are to be distributed in the form of an annuity. The entire reserve amount for contracts in scope that include any life contingent payments are in scope. For example, under a certain-and-life style annuity, the entire reserve for both the certain payments and life contingent payments are in scope. Variable immediate annuity reserves under VM-21 are also in scope where there

are life contingent payments. Scope does not include annuity products that are not life contingent, or deferred annuity products where the policyholder has a right but not an obligation to annuitize. A certain-and-life style annuity, where only certain payments remain (such as following the death of the annuitant), is out of scope. Variable deferred annuity contract reserves under VM-21 are out of scope, including reserves valued under VM-21 for any contracts where policyholder account value has reached zero, but a lifetime benefit may still be payable by the insurer. Line (3) for General Account Life Contingent Miscellaneous reserves is included in the event there are any reserves for products in scope reported on Exhibit 5 line 0799999; it is not meant to include cash flow testing reserves reported on this line. Included in scope are:

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- Group Annuities, such as those associated with pension liabilities with both immediate and deferred benefits

The total reserve exposure is then further broken down by size as in a tax table. This breakdown will not appear on the RBC filing software or on the printed copy, as the application of factors to reserves is completed automatically. The calculation is as follows:

Non-Longevity Reinsurance products:

Line (5)	Life Contingent Annuity Reserves	(1) Statement Value	Factor	(2) RBC Requirement
	First 250 Million		X 0.0171 =	
	Next 250 Million		X 0.0108 =	
	Next 500 Million		X 0.0095 =	
	Over 1,000 Million		X 0.0089 =	
	Total Life Contingent Annuity Reserves			

LR025-A LONGEVITY RISK

Longevity Reinsurance products:

Line (5)	Life Contingent Annuity Reserves	(1) ~~Statement Value~~VM-22 Reserve Floor	Factor	(2) RBC Requirement
	First 250 Million of Total Reserves		X 9.607 ~~0.0171~~ =	
	Next 250 Million		X 6.067 ~~0.0108~~ =	
	Next 500 Million		X 5.337 ~~0.0095~~ =	
	Over 1,000 Million		X 5 ~~0.0089~~ =	
	Total Life Contingent Annuity Reserves			

The amount ultimately included in the authorized control level will be subject to a guardrail factor of 0_and a correlation factor of -.25.

Draft: 12/1/25

Longevity Risk (E/A) Subgroup
Virtual Meeting
October 9, 2025

The Longevity Risk (E/A) Subgroup of the Life Risk-Based Capital (E) Working Group and Life Actuarial (A) Task Force met Oct. 9, 2025. The following Subgroup members participated: Seong-min Eom, Chair (NJ); Lei Rao-Knight (CT); Mike Yanacheak (IA); Ben Slutsker (MN); William B. Carmello (NY); Peter Weber (OH); Rachel Hemphill (TX); and Tomasz Serbinowski (UT).

1. Discussed the Academy's Longevity Risk Factor Approach

Linda Lankowski (American Academy of Actuaries—Academy) described the Academy's proposal (Attachment Twelve-A). She noted that an appropriate measure to base the risk charge on was the present value of future benefits. The risk charges are the current C-2 factors, as outlined in the 2025 risk-based capital (RBC) framework, and more consideration is needed to detail how total asset requirements (TARs) fit into RBC calculations.

Eom asked: 1) if the C-2 factors should be applied to the present value of benefits in the short term; and 2) whether there will be more to consider as the capital framework and Valuation Manual (VM)-22, Requirements for Principle-Based Reserves for Non-Variable Annuities, are implemented. Lankowski agreed that further action may be needed when VM-22 is in effect.

Serbinowski asked if the rationale for the calibration of the factor for escalating benefits was due to the present value of benefits reflecting the expected cost-of-living adjustment (COLA). He stated that this could potentially warrant a higher C-2 factor due to the uncertainty associated with differences between expected and actual COLA. Lankowski agreed.

2. Discussed the ACLI's Longevity Risk Factor Approach

Brian Bayerle (American Council of Life Insurers—ACLI) stated that the ACLI's approach (Attachment Twelve-B) also applies a C-2 factor to the present value of benefits. The ACLI's approach differs in that it includes an offsetting credit for premiums that would not necessarily be reflected in the statutory reserve. Bayerle said premiums associated with longevity reinsurance contracts are contractually guaranteed, which justifies including premiums not already reflected. The goal is to ensure that companies have a TAR that accurately reflects any longevity risk.

Eom asked for details on the credit application. Bayerle said the ACLI acknowledges the reserve is not a good basis for this application, so it proposes two calculations: 1) the present value of liabilities; and 2) a credit for the premiums not accounted for elsewhere. Bayerle said two calculations would make it easier to identify the credit determination.

Eom asked about the practicality of attaining such a net premium amount for the calculation. Bayerle said there is structural work to be done, as well as developing a sound, justifiable methodology to determine the net premium.

Serbinowski asked if the surplus not included would be subtracted after the C-2 factor is applied to the present value of benefits. Bayerle said mechanics could be discussed further.

3. Discussed Minnesota's Longevity Risk Factor Approach

Slutsker described Minnesota's proposal (Attachment Twelve-C) as using the latest year-end principle-based reserving (PBR) model for contracts that are in scope of PBR and the cash-flow testing model for pre-PBR contracts.

Eom asked if the annual factor in the proposal would be developed based on each company's experience or a single factor used across the industry. Slutsker said the annual factor would be based on each company, similarly to C3P1 and C3P2 calculations, where it is unique to the company and not generalized. Slutsker also noted that the calculation could be performed at different times of the year, as it is expected that mortality does not change with the economic environment.

Serbinowski said that this seems more like TAR in the sense that it corresponds more to conditional tail expectation (CTE) 90 than CTE 70. He also asked if steps four and five are used to fit in the existing framework, since the amount is already calculated in step three. Slutsker stated that they are. Slutsker said that if the model were to drop or simplify anything, there might be a difference, but it is expected to be small. Step three would provide the number for a given year.

Serbinowski asked whether it is possible for the value after the shock to still be zero if there is a sufficient margin in the premium to cover a significant portion of the adverse experience. Slutsker said the company is more likely to incur a net loss from the shock closer to the issue date since it was just priced. However, if company mortality emerged favorably overtime, then it may not need to hold additional capital, as the company already holds more reserves than needed. He said that, similarly to the VM-22 methodology, a company should not hold negative reserves; therefore, capital should be treated similarly and floored at zero.

4. Discussed New Jersey's Longevity Risk Factor Approach

Eom said New Jersey's proposal (Attachment Twelve-D) includes developing a C-2 factor based on the mortality shock amount of the present value of the liability divided by the present value of the liability. Companies would get the shock ratio and multiply it by the 12-month benefit amount. The rationale behind using the 12-month benefit amount is that the premium is collected initially, and then the liability will be provided year-by-year or quarter-by-quarter, depending on the contract. Since the premiums are essentially guaranteed, relatively little capital may be needed beyond the reserve in a stressed situation. Eom said most longevity reinsurance transactions are based on non-U.S. populations, and it is unclear if the current factor is stable.

Slutsker asked if New Jersey's proposal has any element that includes a surplus credit, or whether the company still needs to hold capital if it is profitable. Eom stated that those companies would still have to generate capital; however, the 12-month benefit would make the capital flexible.

Eom said her proposal is intended to be consistent with the VM-22 reserve amount floor, but she is open to seeing the present value of reserves with a credit in a sensitivity test. Slutsker asked if the floor would only be reached for the amount subtracted from it. He asked if the floor would apply to the stressed situation's present value of liabilities. Eom said that the floor would not apply to the stressed situation.

Slutsker asked if "Quantity A" in the proposal implied that mortality trend stress and mortality level stress are independent events. He also asked whether: 1) there is a positive correlation between mortality level stress and mortality trend stress; 2) there is double-counting if there is positive correlation; and 3) the square root backs out covariance but leaves a material amount still double-counted. Eom stated that there is uncertainty whether they are correlated or independent, so New Jersey's proposal assumes they are independent.

Serbinowski asked about the magnitude of the expected difference between the "a-to-b ratio" and the current C-2 factor. Eom stated that if New Jersey's proposal proves to be similar to the current C-2 factor, then she would approve using the current C-2 factor. She noted that tests are needed to see if the same factor is applicable to different populations.

Serbinowski noted that Paul Navratil (Academy) was on the call and asked him to comment on the similarity of this approach to the approach the Academy used for developing C-2 factors for payout annuities. Navratil said the Academy took the view that mortality trend stress and mortality level stress are independent. He said the total after covariance will be dominated by the larger of the two. Regarding the factors influencing payout annuities, he noted that for younger populations, it was closer to the trend alone, but for older populations, base mortality became more important. He said the net of the two was not perfectly flat but very similar, so it was reasonable to use a single factor rather than a principle-based calculation.

Slutsker said understanding trend risk in terms of longevity is easily understood, but he asked for an example of a shock in that direction. Navratil said some examples include smoking cessation, statin drugs for cardiac conditions, or the potential future success of gene editing technology, such as clustered regularly interspaced short palindromic repeats (CRISPR), could lead to bumps in mortality. He stated that those examples may not present the same way a shock in mortality would, but they would have a meaningful increase in mortality improvement over a decade.

Serbinowski stated that the question of uncertainty is less about the shock and more about the base mortality assumptions, as large blocks of business would have less uncertainty, but mortality is unknown.

Eom asked Navratil whether the Academy applied a shock to different mortality tables or used a different pattern in the mortality curve when conducting such sensitivity tests. Navratil said shocks were done independently to base mortality and mortality improvement. Eom asked if the conclusion was that they were relatively stable. Navratil said the ratio approach in New Jersey's proposal is similar to what was done for the payout annuity C-2 factors, in that total shock should reflect both mortality trend and mortality level. He said that the net mortality trend and mortality level after covariance were not completely flat, but they were more stable than expected, which led the Academy to conclude that using a factor rather than recalculating it every year was a plausible approach. Navratil noted that the Subgroup should consider whether there is anything different about this product, such as the benefits being outside of the U.S., that would cause them to get different numerical results.

5. Discussed its Next Steps

Eom noted that Minnesota's proposal needed more consideration due to its complexity. She said she would like to see data regarding the stability of the results. Slutsker stated that, from an implementation perspective, models are already available, and the only complexity is redoing the calculation each year, as CTE 70 is more complex than the statutory reserve. Slutsker suggested a demonstration comparing Minnesota's approach to the other proposals to show such differences in frequency, shock, denominator, and whether to use the reserve or CTE 70.

Eom said New Jersey's proposal is not based on company experience, but instead is based on developing a singular set of factors for all companies to use, similar to the current C-2 factors. Slutsker agreed it would be simpler if the factor was consistent across different companies. Eom said a sensitivity test, depending on base mortality and mortality improvement, is needed. She said it may not be different from tests done for previous C-2 factors. She said that if proven stable, using the current C-2 factor would be appropriate; however, the Subgroup can move forward with next steps if proven otherwise. Eom asked the Academy or ACLI to prove that such factors are relatively stable regardless of population mortality. Bayerle stated that the ACLI could assemble an analysis of the

proposals. Lankowski said the data the Academy has regarding the topic is outdated, so conducting extensive data analysis in such a short time would be challenging.

Navratil said that the risk based on longevity itself seemed to be stable. He said that Minnesota's proposal captures how different companies' books being in-the-money will not be consistent across the industry; he said that is the key difference between discussions regarding longevity reinsurance and payout annuities. Slutsker agreed that the surplus of each company will be different, but he said there are aspects of each proposal that could be implemented into one method.

Serbinowski said Minnesota's proposal was not complicated. Serbinowski questioned how difficult it would be for companies to run one more scenario with mortality improvement at 1%, 1.5%, or 2%, considering companies are already running these types of scenarios to prepare their financial statements. However, a challenge of the ACLI's proposal requires recognition of the surplus premium, which may not be straightforward. He also asked if it is feasible to revisit what was done for the current C-2 factor to address how dependent the calculation was on base mortality and trend in such a short time. Lankowski thought it was reasonable to analyze stability. Bayerle stated that the ACLI will further detail the offsetting credit.

Eom stated that prior data may be adequate, or little additional data may be needed, to continue with the sensitivity tests. She said the Subgroup plans to discuss progress at the Fall National Meeting so that it can make a proposal to the Life Risk-Based Capital (E) Working Group by March 2026.

Lankowski asked whether there would be a change in methodology if there is no proposal by March. Eom stated that if there is not much change or the approach uses the same factor, then it will be exposed as-is. Lankowski asked if a change of more than just the factor needs to be exposed by December. Amy Fitzpatrick (NAIC) stated that if there is a structural change to the RBC blanks, then March is the ultimate deadline, as noted in the timeline provided in this meeting's materials (Attachment Twelve-E).

Having no further business, the Longevity Risk (E/A) Subgroup adjourned.

SharePoint/NAIC Support Staff Hub/Member Meetings/A CMTE/LATF/2025-3-Fall/LongevitySG/10 09/Oct 9_Longevity.docx

September 15, 2025

Ms. Seong-Min Eom
Chair, Longevity Risk (E/A) Subgroup
National Association of Insurance Commissioners

Re: Longevity Risk Subgroup Exposure

Dear Chair Eom:

On behalf of the Life Practice Council of the American Academy of Actuaries,[1] I am sharing some of our thoughts regarding an approach for determining capital charges for longevity reinsurance, in response to the Longevity Risk (E/A) Subgroup's (Subgroup)***Longevity Risk Factor Approach Proposal Request***.

Background

Longevity reinsurance contracts were excluded from the scope of the year-end 2021 implementation of C-2 Longevity within Life Risk-Based Capital (LRBC) because of the need for further discussion on appropriate reserve and capital methodology given product differences compared to payout annuities.

The C-2 Longevity factor implemented in 2021 was calibrated to capture the potential impact of longevity risk (mortality level, trend, and volatility risks) on payout annuity products. Longevity reinsurance transfers the longevity risk associated with immediate and/or deferred payout annuity products that are already in scope for C-2 Longevity.

Suggested Approaches

We suggest a C-2 methodology for longevity reinsurance that starts with the existing C-2 factor to maintain consistency in the calibration of longevity risk across similar products.

Several considerations unique to longevity reinsurance will need to be considered in developing final capital methodology and factors, including:

1. **The capital factor for longevity reinsurance should be applied to the present value of benefits rather than the reserve.** The existing C-2 capital factor is applied to reserves for payout annuities. Reserves for longevity reinsurance are much lower than the full present value of reinsured benefits since they give some consideration to future premiums. The existing C-2 capital factors are only appropriate for longevity reinsurance if they are applied to the full present value of annuity benefits subject to longevity risk rather than the much lower reserve amount.

[1] The American Academy of Actuaries is a 20,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For 60 years, the Academy has assisted 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.

2. **The calibration of the factor should consider the impact of escalating benefits.** The current C-2 factor was calibrated considering a level annuity benefit amount as is common for payout annuity benefits in the U.S. Benefit amounts that increase over time such as through a cost-of-living adjustment (COLA) may be more common within longevity reinsurance contracts that reinsure pension benefits, particularly those offered by non-U.S. plans. The Subgroup might want to consider whether escalating benefit streams warrant a higher longevity risk factor and, if so, the most appropriate way to reflect that risk in the capital framework.

3. **The Subgroup will need to decide whether to take a Total Asset Requirement (TAR) approach or to consider reserves and capital independently.** The reserve floor and aggregation restrictions applied in VM-22 result in some instances in which future premiums are not fully reflected in reserves. A principle-based TAR approach would align the capital requirement with the existing VM-22 reserve requirements and produce a combined framework that reflects all premium and benefit cashflows calibrated at an appropriate stress level, which we believe is more consistent with the risks assumed by the reinsurers writing this business. The alternative approach would be to calibrate capital independently from reserves and, consequently, not consider the impact of reserve flooring in setting capital requirements. This would be a simpler approach to implement and has historical precedent in other RBC work. However, it would also tend to overstate the risks the companies writing this business are exposed to in practice, likely resulting in a TAR greater than a principle-based calculation.

We appreciate the opportunity to share this feedback with the Subgroup. Should you have any questions or comments regarding these comments, please contact Amanda Barry-Moilanen, the Academy's life policy project manager (barrymoilanen@actuary.org).

Sincerely,

Jason Kehrberg, MAAA, FSA
Chairperson, Life Practice Council
American Academy of Actuaries

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September 15, 2025

Seong-min Eom
Chair, NAIC Longevity Risk (E/A) Subgroup

Re: The July 2025 Longevity Risk Factor Approach Proposal Request

Dear Chair Eom:

The American Council of Life Insurers (ACLI) appreciates the opportunity to submit a proposed approach to develop Life Risk Based Capital Longevity Risk C-2 factor(s) for longevity reinsurance business as requested by the Subgroup. In accordance with the language included in the exposure document, we note that we were also mindful throughout the drafting process that the Subgroup is not seeking development of specific C-2 factor values with deep technical analysis and made sure to include descriptions of methodologies for C-2 factor development, complete with explanations and justifications for our proposed approach.

ACLI proposes applying the C-2 factor to the present value of benefits, with an offset credit for future surplus not included in calculated statutory reserves.

We believe this approach is preferable for several reasons. First, it leverages the current C-2 framework without developing a separate methodology for longevity reinsurance. This aspect of our proposal is crucial since there are many parts of the current C-2 methodology that work well as risk measurement tools. Second, given premiums are contractually guaranteed and claims are only due if premiums are paid, this approach would allow for equivalent treatment in the RBC framework between longevity reinsurance and annuity products where assets from the initial premium are available to fund capital. Further, this approach recognizes that early duration reserves are not an appropriate basis to apply the factor, thus it bifurcates the reserves into the benefits (to which the C-2 factor can be applied), as well as consideration for future surplus not included in calculated statutory reserves.

While there would still be questions left to answer and analysis left to be performed related to other considerations such as shocks for data from other countries and specific application of the proposal discussed above, our proposal helps address the overarching concern of what the appropriate level of tail risks is to consider. Getting the Total Asset Requirement to a point where it properly captures longevity risk, meets the desires of regulators, and allows for companies to hold appropriate capital is imperative and should be the desired outcome of any methodology changes to this portion of the RBC framework.

Thank you once again for the opportunity to provide this feedback and we look forward to further discussion with regulators and NAIC staff at the Subgroup level.

Sincerely,

cc: Amy Fitzpatrick, NAIC

COMMERCE DEPARTMENT

Date: 08/25/2025

To: Seong-min Eom, Chair of the Longevity Risk (A/E) Subgroup

Subject: C-2b Charge for Longevity Reinsurance

Thank you for the opportunity to provide comments on the Life C-2 Mortality Factor proposal. We support the effort to explore the development of a C-2 longevity risk factor for longevity reinsurance agreements. In this letter we offer one possible approach to consider for such factor's development.

We believe that one method to consider for measuring longevity risk is to shock the longevity assumption (i.e., trend risk for reductions in mortality) while holding all other assumptions and factors constant. Given that this business will soon be subject to VM-22 calculations, we believe this method can leverage the PBR calculation, resulting in both a theoretically correct and practically feasible method. Our proposed method follows the below steps:

1. Baseline Present Value – Using the latest year-end PBR model (or CFT model for pre-PBR business), calculate the actuarial present value of outflows less inflows, including the recognition recurring premiums, under Scenario 12 from the NAIC economic scenario generator, for the entire block of longevity reinsurance contracts held by the company.
    a. If less feasible for companies to obtain a net asset earned rate (NAER) for discounting cash flows in this method, we could also explore modifying this method such that it uses a scenario reserve calculation rather than an actuarial present value calculation.

2. Shock Present Value – Repeat step 1, but increase mortality improvement to a [X]%, reflecting a CTE90 level within a representative longevity risk distribution.
    a. The [X]% shock would be hardcoded in the instructions and the same for all companies calculating the method.
    b. We recommend that [X]% be no lower than 1%, as this is the shock used for the VM-22 stochastic exclusion ratio test.
    c. Any quantitative evidence offered by interested parties would be considered in determining the final number. In absence of any supporting data, one possible starting point could be a shock of 2.0% to future mortality improvement.

3. Impact of Shock – Subtract the present value of actuarial cash flows in step 1, floored at zero, from the actuarial present value of cash flows in step 2, floored at zero.

4. Factor Development – Divide the amount in Step 3 by the latest year-end statutory reserve held for the associated contracts. This equals the C-2b factor to use for RBC.
    a. Note the statutory reserves may be as low as the sum of anticipated benefits over the next 12 months, as this is the floor within the VM-22 reserve calculation for longevity reinsurance.
    b. If statutory reserves are low relative to the difference of the actuarial present value of cash flows and, therefore, are expected to produce unstable ratio levels, one modification to this proposed method for the Subgroup to consider is using the present value of Scenario 12 projected benefits instead of the statutory reserves. Of course, the disadvantage is that this number is less auditable.

5. RBC Amount – Calculate the C-2b amount by multiplying the factor from step 4 by the statutory reserves included in the RBC instructions.

We believe that using this "longevity shock method" is a direct and implementable approach to calculate a C-2b factor for longevity risk. In addition, this approach only shocks the longevity assumption in excess of moderately adverse risk, therefore avoiding double-counting between capital and reserves.

We also believe it is appropriate to include recurring premium within this calculation because, if such premium is guaranteed, then we would expect the floating leg payments to vary considerably from the fixed leg payment in an adverse scenario, and therefore still capture the inherent longevity risk associated with such agreements.

Thank you for consideration of our letter and, of course, we are happy to discuss further or answer any questions.

Insurance Division
Minnesota Department of Commerce

Proposal for Longevity Reinsurance C-2 Factor Development:

The proposed methodology is to develop the Life RBC C-2 Longevity Risk factor for Longevity Reinsurance, as the ratio of quantities A (the numerator) and B (denominator), as defined below:

- A – calculate combined impact of Mortality Level Stress (ML) and Mortality Trend Stress (MT) on Present Value of Liabilities (Benefits), with each covering 95th percentile* of respective mortality and mortality improvement scenarios. The combined impact (quantity A) would be calculated as SQRT of ((ML squared) + (MT squared)).

  * Other confidence intervals may be considered during the factor development process: e.g. 99%

- B – is set equal to the Present Value of Liabilities (Benefits) used in the PBR VM-22 reserves

The rationale for selecting B as the denominator for the RBC factors (as opposed to reserves) is that the reserves tend to start out very small (often at the reserve floor level referenced above), but then grow substantially higher, while the impact of mortality and mortality deterioration tends to be proportional to liabilities only (not the reserves). Also, as the block of business matures, this would be consistent with higher volatility of the runoff business (when the volumes become small) and lack of credible older age mortality data.

Once the C-2 factor is developed, it won't be updated unless there are material changes in the mortality level and mortality trend patterns, or longevity reinsurance market distribution (e.g. expansion of the longevity reinsurance market to other countries).

Total Longevity Risk C-2 Capital would be equal to the C-2 factor (calculated as per above) times the average of 1-year liabilities**.

** Scheduled longevity benefits payable by the benefit provider within the next 12 months from the date of valuation.

Longevity Reinsurance C2 Approach Timeline

Timeline	7 25	8 25	9 25	10 25	11 25	12 25	1 26	2 26	3 26	4 26	5 26	6 26	Notes
Expose request for longevity risk factor proposal approaches													SG exposed for 60-days ending 9/15
Review approaches, identify viable approaches. Request detailed proposals													Tentative: 60-day exposure due Dec 2025 to discuss comments at Fall National Meeting
Discuss and refine viable proposals													
Adopt and submit proposed approach to Life RBC WG for 2026 adoption													Tentative: SG recommend to Life RBC by 3/1/26
Life RBC WG exposure of proposal (at least 30 day exposure)													Exposure by March 22-25 (2026 Spring National Meeting dates) if proposal involves structural changes. Exposure by May 1 proposal does not involve structural changes (e.g. factor only, instructions changes).
Life RBC WG adoption													Adoption by April 30 if proposal involves structural changes. Adoption by June 15 if proposal does not involve structural changes (e.g. factor only, instructions changes).
Capital Adequacy Task Force adoption													Adoption by May 15 if proposal involves structural changes. Adoption by June 30 if proposal does not involve structural changes (e.g. factor only, instructions changes).

Summary of approaches grouped by structure

All approaches received were in the format of **Value x C2-b**
Some require structural changes to LR025-A

Structural Changes

Change value from statutory reserve to a present-value of benefits because the reserves can be very low or zero in early years.

ACLI, Academy, NJ commenters proposed Value:

- Academy: Present value of benefits
- ACLI: present value of benefits, with an offset credit for future surplus not included in calculated statutory reserves
- NJ: Immediate next 12-month benefit amount

No Structural Changes

- Use the statutory reserves as currently included in the RBC instructions.
- "longevity shock method": Shock the longevity assumption to measure the longevity risk leveraging the VM-22 PBR calculations.

MN proposed value:

- Value = Statutory Reserve