

## Capital Adequacy (E) Task Force

### RBC Proposal Form

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Capital Adequacy (E) Task Force  | <input type="checkbox"/> Health RBC (E) Working Group     | <input type="checkbox"/> Life RBC (E) Working Group               |
| <input type="checkbox"/> Catastrophe Risk (E) Subgroup    | <input type="checkbox"/> Investment RBC (E) Working Group | <input type="checkbox"/> Operational Risk (E) Subgroup            |
| <input type="checkbox"/> C3 Phase II/ AG43 (E/A) Subgroup | <input type="checkbox"/> P/C RBC (E) Working Group        | <input checked="" type="checkbox"/> Longevity Risk (A/E) Subgroup |

<b>DATE:</b> <u>4/29/2021</u>	<b><u>FOR NAIC USE ONLY</u></b>
<b>CONTACT PERSON:</b> <u>Dave Fleming</u> <b>TELEPHONE:</b> <u>816-783-8121</u> <b>EMAIL ADDRESS:</b> <u>dfleming@naic.org</u> <b>ON BEHALF OF:</b> <u>Longevity Risk (A/E) Subgroup</u> <b>NAME:</b> <u>Rhonda Ahrens, Chair</u> <b>TITLE:</b> <u>Chief Actuary</u> <b>AFFILIATION:</b> <u>Nebraska Department of Insurance</u> <b>ADDRESS:</b> <u>1135 M Street, Suite 300</u> <u>Lincoln, NE 68501-2089</u>	Agenda Item # <u>2021-13-L</u> Year <u>2021</u>  <b style="text-align: center;"><u>DISPOSITION</u></b> <input type="checkbox"/> ADOPTED _____ <input type="checkbox"/> REJECTED _____ <input type="checkbox"/> DEFERRED TO _____ <input type="checkbox"/> REFERRED TO OTHER NAIC GROUP _____ <input checked="" type="checkbox"/> EXPOSED <u>4/29/2021</u> <input type="checkbox"/> OTHER (SPECIFY) _____

#### IDENTIFICATION OF SOURCE AND FORM(S)/INSTRUCTIONS TO BE CHANGED

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Health RBC Blanks       | <input type="checkbox"/> Property/Casualty RBC Blanks       | <input checked="" type="checkbox"/> Life and Fraternal RBC Instructions |
| <input type="checkbox"/> Health RBC Instructions | <input type="checkbox"/> Property/Casualty RBC Instructions | <input checked="" type="checkbox"/> Life and Fraternal RBC Blanks       |
| <input type="checkbox"/> OTHER _____             |   |   |

#### DESCRIPTION OF CHANGE(S)

This proposal presents base factors and correlation and guardrail factors for the longevity risk charge.

#### REASON OR JUSTIFICATION FOR CHANGE \*\*

The Longevity Risk (A/E) Subgroup was charged with providing recommendations for recognizing longevity risk in statutory reserves and/or RBC, as appropriate. The Subgroup's recommendation for the structure necessary was adopted by the Life Risk-Based Capital (E) Working Group on 2-14-20 in proposal 2019-13-L and factors of zero were adopted in proposal 2020-06-L for year end 2020.

#### Additional Staff Comments:

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\*\* This section must be completed on all forms.

Revised 2-2019

# 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 95<sup>th</sup> percentile level. For the purpose of this calibration aggregate reserves were assumed to provide for an 85<sup>th</sup> 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.

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.

## Specific Instructions for Application of the Formula

Annual statement reference is for the total ~~life-contingent~~ 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 ~~Payout-Income~~ Annuities which will enter annuity pay status in the future ~~upon annuitization~~
- 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	(1) Statement Value	Factor	(2) RBC Requirement
	First 250 Million	_____	X <b>0.0135</b> =	_____
	Next 250 Million	_____	X <b>0.0085</b> =	_____
	Next 500 Million	_____	X <b>0.0075</b> =	_____
	Over 1,000 Million	_____	X <b>0.0070</b> =	_____
	Total Life Contingent Annuity Reserves	=====		=====

The amount ultimately included in the authorized control level will be subject to a guardrail factor of \_\_\_\_\_ and a correlation factor of \_\_\_\_\_.

Longevity Risk

	Annual Statement Source	(1) Statement Value	Factor	(2) RBC Requirement
		\$0		
(1)	General Account Life Contingent Annuity Reserves	\$0		
(2)	General Account Life Contingent Supplemental Contract Reserves	\$0		
(3)	General Account Life Contingent Miscellaneous Reserves	\$0		
(4)	Separate Account (SA) Life Contingent Annuity Reserves	\$0		
(5)	Total Life Contingent Annuity Reserves	\$0 X	†	\$0

Base Factors are From Longevity Risk Task Force's Spring 2019 report

†	The tiered calculation is illustrated in the Longevity Risk section of the risk-based capital instructions.	up to \$250M 1.35%	0.0135
‡	Include only the portion of reserves for products in scope per the instructions	next \$250M 0.85%	0.0085
		next \$500M 0.75%	0.0075
		over \$1B 0.70%	0.007

**=MAX(ROUND(IF(D10<250000000,D10\*0.0135,IF(D10<500000000,250000000\*0.0135+(D10-500000000)\*0.0085,IF(D10<1000000000,250000000\*0.0135+250000000\*0.0085+(D10-500000000)\*0.0075,250000000\*0.0135+250000000\*0.0085+500000000\*0.0075+(D10-1000000000)\*0.007)),0),0)**

||CALCULATION OF TAX EFFECT FOR LIFE AND FRATERNAL RISK-BASED CAPITAL

		(1)		(2)
<u>Insurance Risk</u>				
(133)	Disability Income Premium	LR019 Health Premiums Column (2) Lines (21) through (27)	\$0 X 0.2100	= \$0
(134)	Long-Term Care	LR019 Health Premiums Column (2) Line (28) + LR023 Long-Term Care Column (4) Line (7)	\$0 X 0.2100	= \$0
(135)	Life Insurance C-2 Risk	LR025 Life Insurance Column (2) Line (8)	\$0 X 0.2100	= \$0
(136)	Group Insurance C-2 Risk	LR025 Life Insurance Column (2) Lines (20) and (21)	\$0 X 0.2100	= \$0
(136b)	Longevity C-2 Risk	LR025-A Longevity Risk Column (2) Line (5)	\$0 X 0.2100	= \$0
(137)	Disability and Long-Term Care Health Claim Reserves	LR024 Health Claim Reserves Column (4) Line (9) + Line (15)	\$0 X 0.2100	= \$0
(138)	Premium Stabilization Credit	LR026 Premium Stabilization Reserves Column (2) Line (10)	\$0 X 0.0000	= \$0
(139)	Total C-2 Risk	L(133) + L(134) + L(137) + L(138) + Greatest of [Guardrail Factor * (L(135)+L(136)), Guardrail Factor * L(136b), Square Root of [ (L(135) + L(136)) <sup>2</sup> + L(136b) <sup>2</sup> + 2 * (TBD Correlation Factor) * (L(135) + L(136)) * L(136b) ] ]	\$0	= \$0

Guardrail Factor: 0.0  
Correlation Factor: 0.00

=D5+D6+D11+D13+MAX(SL13\*(D8+D9),SL13\*D10,SQRT((D8+D9)^2+D10^2+2\*SL14\*(D8+D9)\*D10))

**CALCULATION OF AUTHORIZED CONTROL LEVEL RISK-BASED CAPITAL**

(1)

<u>Insurance Risk (C-2)</u>			
(43)	Individual and Industrial Life Insurance	LR025 Life Insurance Column (2) Line (8)	0
(44)	Group and Credit Life Insurance and FEGLI/SGLI	LR025 Life Insurance Column (2) Lines (20) and (21)	0
(44b)	Longevity Risk	LR025-A Longevity Risk Column (2) Line (5)	\$0
(45)	Total Health Insurance	LR024 Health Claim Reserves Column (4) Line (18)	\$0
(46)	Premium Stabilization Reserve Credit	LR026 Premium Stabilization Reserves Column (2) Line (10)	\$0
(47)	Total (C-2) - Pre-Tax	L(45) + L(46) + Greatest of [ Guardrail Factor * (L(43)+L(44)), Guardrail Factor * L(44b), Square Root of [ (L(43) + L(44)) <sup>2</sup> + L(44b) <sup>2</sup> + 2 * (TBD Correlation Factor) * (L(43) + L(44)) * L(44b) ] ]	\$0
(48)	(C-2) Tax Effect	LR030 Calculation of Tax Effect for Life and Fraternal Risk-Based Capital Column (2) Line (139)	\$0
(49)	Net (C-2) - Post-Tax	Line (47) - Line (48)	\$0

Guardrail F 0.0  
Correlation 0.00

=D7+D8+MAX(H9\*(D4+D5),H9\*D6,SQRT((D4+D5)^2+D6^2+2\*H10\*(D4+D5)\*D6))