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**DEPARTMENT OF INSURANCE**

CHAPTER 69

Statutory Authority: 1976 Code Sections 1-23-110 et seq., 38-3-110 and 38-9-180

69-37. Annuity Mortality Tables For Use In Determining Reserve Liabilities For Annuities

**Synopsis:**

The South Carolina Department of Insurance proposes to amend Regulation 69‑37, Annuity Mortality Tables For Use In Determining Reserve Liabilities For Annuities. The amendments to Regulation 69‑37 will recognize the 2012 Individual Annuity Reserve Table (“2012 IAR Table”) for use in determining the minimum standard of valuation for annuity and pure endowment contracts issued on or after January 1, 2015. Notice of drafting for the proposed regulation was published in the *State Register* on October 25, 2013.

**Instructions:**

Amend Regulation 69-37 as drafted below and add to the South Carolina Code of Regulations.

**Text:**

69‑37. Annuity Mortality Tables For Use In Determining Reserve Liabilities For Annuities

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Section 1. Authority

This regulation is promulgated by the Director of Insurance pursuant to Section 38‑9‑180 of the South Carolina Code.

Section 2. Purpose

The purpose of this regulation is to recognize the following mortality tables for use in determining the minimum standard of valuation for annuity and pure endowment contracts: the 1983 Table "a," the 1983 Group Annuity Mortality (1983 GAM) Table, the Annuity 2000 Mortality Table, the 2012 Individual Annuity Reserving (2012 IAR) Table and the 1994 Group Annuity Reserving (1994 GAR) Table.

Section 3. Definitions

A. As used in this regulation "1983 Table 'a"' means that mortality table developed by the Society of Actuaries Committee to Recommend a New Mortality Basis for Individual Annuity Valuation and adopted as a recognized mortality table for annuities in June 1982 by the National Association of Insurance Commissioners.

B. As used in this regulation "1983 GAM Table" means that mortality table developed by the Society of Actuaries Committee on Annuities and adopted as a recognized mortality table for annuities in December 1983 by the National Association of Insurance Commissioners.

C. As used in this regulation "1994 GAR Table" means that mortality table developed by the Society of Actuaries Group Annuity Valuation Table Task Force. The 1994 GAR Table is included in the report on pages 865‑919 of Volume XLVII of the Transactions of the Society of Actuaries (1995).

D. As used in this regulation "Annuity 2000 Mortality Table" means that mortality table developed by the Society of Actuaries Committee on Life Insurance Research. The Annuity 2000 Table is included in the report on pages 211‑249 of Volume XLVII of the Transactions of the Society of Actuaries (1995).

E. As used in this regulation, “Period table” means a table of mortality rates applicable to a given calendar year (the Period).

F. As used in this regulation, “Generational mortality table” means a mortality table containing a set of mortality rates that decrease for a given age from one year to the next based on a combination of a

Period table and a projection scale containing rates of mortality improvement.

G. As used in this regulation “2012 IAR Table” means that Generational mortality table developed by the Society of Actuaries Committee on Life Insurance Research and containing rates, qx2012+n, derived from a combination of the 2012 IAM Period Table and Projection Scale G2, using the methodology stated in Section 5.

H. As used in this regulation, “2012 Individual Annuity Mortality Period Life (2012 IAM Period) Table” means the Period table containing loaded mortality rates for calendar year 2012. This table

contains rates, qx2012, developed by the Society of Actuaries Committee on Life Insurance

Research and is shown in Appendices 1-2.

I. As used in this regulation, “Projection Scale G2 (Scale G2)” is a table of annual rates, G2x, of mortality improvement by age for projecting future mortality rates beyond calendar year 2012. This table

was developed by the Society of Actuaries Committee on Life Insurance Research and is shown in

Appendices 3-4.

Section 4. Individual Annuity or Pure Endowment Contracts

A. Except as provided in Subsections B and C of this section, the 1983 Table "a" is recognized and approved as an individual annuity mortality table for valuation and, at the option of the company, may be used for purposes of determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 1979.

B. Except as provided in Subsection C of this section, either the 1983 Table "a" or the Annuity 2000 Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 1986.

C. Except as provided in Subsection D of this section, the Annuity 2000 Mortality Table shall be used for determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2001.

D. Except as provided in Subsection E of this section, the 2012 IAR Mortality Table shall be used for

determining the minimum standard of valuation for any individual annuity or pure endowment contract issued on or after January 1, 2015.

E. The 1983 Table "a" without projection is to be used for determining the minimum standards of valuation for an individual annuity or pure endowment contract issued on or after January 1, 2001, solely when the contract is based on life contingencies and is issued to fund periodic benefits arising from:

(1) Settlements of various forms of claims pertaining to court settlements or out of court settlements from tort actions;

(2) Settlements involving similar actions such as workers' compensation claims; or

(3) Settlements of long term disability claims where a temporary or life annuity has been used in lieu of continuing disability payments.

Section 5. Application of the 2012 IAR Mortality Table

In using the 2012 IAR Mortality Table, the mortality rate for a person age x in year (2012 + n) is calculated as follows:

qx2012+n = qx2012(1- G2x) n

The resulting qx 2012+n shall be rounded to three decimal places per 1,000, e.g., 0.741 deaths per 1,000. Also, the rounding shall occur according to the formula above, starting at the 2012 period table rate.

For example, for a male age 30, qx2012= 0.741.

qx 2013= 0.741 \* (1 – 0.010) ^ 1 = 0.73359, which is rounded to 0.734.

qx 2014= 0.741 \* (1 – 0.010) ^ 2 = 0.7262541, which is rounded to 0.726.

A method leading to incorrect rounding would be to calculate qx 2014 as qx 2013 \* (1 – 0.010), or 0.734 \* 0.99 = 0.727.

It is incorrect to use the already rounded qx 2013 to calculate qx 2014 **.**

Section 6. Group Annuity or Pure Endowment Contracts

A. Except as provided in Subsections B and C of this section, the 1983 GAM Table, the 1983 Table "a" and the 1994 GAR Table are recognized and approved as group annuity mortality tables for valuation and, at the option of the company, any one of these tables may be used for purposes of valuation for an annuity or pure endowment purchased on or after January 1, 1979 under a group annuity or pure endowment contract.

B. Except as provided in Subsection C of this section, either the 1983 GAM Table or the 1994 GAR Table shall be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1, 1986 under a group annuity or pure endowment contract.

C. The 1994 GAR Table shall be used for determining the minimum standard of valuation for any annuity or pure endowment purchased on or after January 1, 2001 under a group annuity or pure endowment contract.

Section 7. Application of the 1994 GAR Table

In using the 1994 GAR Table, the mortality rate for a person age x in year (1994 +" n) is calculated as follows:

qx1994+" n = qx1994 (l ‑ AAx)n

where the qx1994 and AAxs are as specified in the 1994 GAR Table.

Section 8. Separability

If any provision of this regulation or its application to any person or circumstances is for any reason held to be invalid, the remainder of the regulation and the application of its provisions to other persons or circumstances shall not be affected.

APPENDIX I

2012 IAM Period Table

Female, Age Nearest Birthday

AGE 1000 qx2012 AGE 1000 qx2012 AGE 1000 qx2012 AGE 1000 qx2012

0 1.621 30 0.300 60 3.460 90 88.377

1 0.405 31 0.321 61 3.916 91 97.491

2 0.259 32 0.338 62 4.409 92 107.269

3 0.179 33 0.351 63 4.933 93 118.201

4 0.137 34 0.365 64 5.507 94 130.969

5 0.125 35 0.381 65 6.146 95 146.449

6 0.117 36 0.402 66 6.551 96 163.908

7 0.110 37 0.429 67 7.039 97 179.695

8 0.095 38 0.463 68 7.628 98 196.151

9 0.088 39 0.504 69 8.311 99 213.150

10 0.085 40 0.552 70 9.074 100 230.722

11 0.086 41 0.600 71 9.910 101 251.505

12 0.094 42 0.650 72 10.827 102 273.007

13 0.108 43 0.697 73 11.839 103 295.086

14 0.131 44 0.740 74 12.974 104 317.591

15 0.156 45 0.780 75 14.282 105 340.362

16 0.179 46 0.825 76 15.799 106 362.371

17 0.198 47 0.885 77 17.550 107 384.113

18 0.211 48 0.964 78 19.582 108 400.000

19 0.221 49 1.051 79 21.970 109 400.000

20 0.228 50 1.161 80 24.821 110 400.000

21 0.234 51 1.308 81 28.351 111 400.000

22 0.240 52 1.460 82 32.509 112 400.000

23 0.245 53 1.613 83 37.329 113 400.000

24 0.247 54 1.774 84 42.830 114 400.000

25 0.250 55 1.950 85 48.997 115 400.000

26 0.256 56 2.154 86 55.774 116 400.000

27 0.261 57 2.399 87 63.140 117 400.000

28 0.270 58 2.700 88 71.066 118 400.000

29 0.281 59 3.054 89 79.502 119 400.000

120 1000.000

APPENDIX II

2012 IAM Period Table

Male, Age Nearest Birthday

AGE 1000 qx2012 AGE 1000 qx2012 AGE 1000 qx2012 AGE 1000 qx2012

0 1.605 30 0.741 60 5.096 90 109.993

1 0.401 31 0.751 61 5.614 91 123.119

2 0.275 32 0.754 62 6.169 92 137.168

3 0.229 33 0.756 63 6.759 93 152.171

4 0.174 34 0.756 64 7.398 94 168.194

5 0.168 35 0.756 65 8.106 95 185.260

6 0.165 36 0.756 66 8.548 96 197.322

7 0.159 37 0.756 67 9.076 97 214.751

8 0.143 38 0.756 68 9.708 98 232.507

9 0.129 39 0.800 69 10.463 99 250.397

10 0.113 40 0.859 70 11.357 100 268.607

11 0.111 41 0.926 71 12.418 101 290.016

12 0.132 42 0.999 72 13.675 102 311.849

13 0.169 43 1.069 73 15.150 103 333.962

14 0.213 44 1.142 74 16.860 104 356.207

15 0.254 45 1.219 75 18.815 105 380.000

16 0.293 46 1.318 76 21.031 106 400.000

17 0.328 47 1.454 77 23.540 107 400.000

18 0.359 48 1.627 78 26.375 108 400.000

19 0.387 49 1.829 79 29.572 109 400.000

20 0.414 50 2.057 80 33.234 110 400.000

21 0.443 51 2.302 81 37.533 111 400.000

22 0.473 52 2.545 82 42.261 112 400.000

23 0.513 53 2.779 83 47.441 113 400.000

24 0.554 54 3.011 84 53.233 114 400.000

25 0.602 55 3.254 85 59.855 115 400.000

26 0.655 56 3.529 86 67.514 116 400.000

27 0.688 57 3.845 87 76.340 117 400.000

28 0.710 58 4.213 88 86.388 118 400.000

29 0.727 59 4.631 89 97.634 119 400.000

120 1000.000

APPENDIX III

Projection Scale G2

Female, Age Nearest Birthday

AGE G2x AGE G2x AGE G2x AGE G2x

0 0.010 30 0.010 60 0.013 90 0.006

1 0.010 31 0.010 61 0.013 91 0.006

2 0.010 32 0.010 62 0.013 92 0.005

3 0.010 33 0.010 63 0.013 93 0.005

4 0.010 34 0.010 64 0.013 94 0.004

5 0.010 35 0.010 65 0.013 95 0.004

6 0.010 36 0.010 66 0.013 96 0.004

7 0.010 37 0.010 67 0.013 97 0.003

8 0.010 38 0.010 68 0.013 98 0.003

9 0.010 39 0.010 69 0.013 99 0.002

10 0.010 40 0.010 70 0.013 100 0.002

11 0.010 41 0.010 71 0.013 101 0.002

12 0.010 42 0.010 72 0.013 102 0.001

13 0.010 43 0.010 73 0.013 103 0.001

14 0.010 44 0.010 74 0.013 104 0.000

15 0.010 45 0.010 75 0.013 105 0.000

16 0.010 46 0.010 76 0.013 106 0.000

17 0.010 47 0.010 77 0.013 107 0.000

18 0.010 48 0.010 78 0.013 108 0.000

19 0.010 49 0.010 79 0.013 109 0.000

20 0.010 50 0.010 80 0.013 110 0.000

21 0.010 51 0.010 81 0.012 111 0.000

22 0.010 52 0.011 82 0.012 112 0.000

23 0.010 53 0.011 83 0.011 113 0.000

24 0.010 54 0.011 84 0.010 114 0.000

25 0.010 55 0.012 85 0.010 115 0.000

26 0.010 56 0.012 86 0.009 116 0.000

27 0.010 57 0.012 87 0.008 117 0.000

28 0.010 58 0.012 88 0.007 118 0.000

29 0.010 59 0.013 89 0.007 119 0.000

120 0.000

APPENDIX IV

Projection Scale G2

Male, Age Nearest Birthday

AGE G2x AGE G2x AGE G2x AGE G2x

0 0.010 30 0.010 60 0.015 90 0.007

1 0.010 31 0.010 61 0.015 91 0.007

2 0.010 32 0.010 62 0.015 92 0.006

3 0.010 33 0.010 63 0.015 93 0.005

4 0.010 34 0.010 64 0.015 94 0.005

5 0.010 35 0.010 65 0.015 95 0.004

6 0.010 36 0.010 66 0.015 96 0.004

7 0.010 37 0.010 67 0.015 97 0.003

8 0.010 38 0.010 68 0.015 98 0.003

9 0.010 39 0.010 69 0.015 99 0.002

10 0.010 40 0.010 70 0.015 100 0.002

11 0.010 41 0.010 71 0.015 101 0.002

12 0.010 42 0.010 72 0.015 102 0.001

13 0.010 43 0.010 73 0.015 103 0.001

14 0.010 44 0.010 74 0.015 104 0.000

15 0.010 45 0.010 75 0.015 105 0.000

16 0.010 46 0.010 76 0.015 106 0.000

17 0.010 47 0.010 77 0.015 107 0.000

18 0.010 48 0.010 78 0.015 108 0.000

19 0.010 49 0.010 79 0.015 109 0.000

20 0.010 50 0.010 80 0.015 110 0.000

21 0.010 51 0.011 81 0.014 111 0.000

22 0.010 52 0.011 82 0.013 112 0.000

23 0.010 53 0.012 83 0.013 113 0.000

24 0.010 54 0.012 84 0.012 114 0.000

25 0.010 55 0.013 85 0.011 115 0.000

26 0.010 56 0.013 86 0.010 116 0.000

27 0.010 57 0.014 87 0.009 117 0.000

28 0.010 58 0.014 88 0.009 118 0.000

29 0.010 59 0.015 89 0.008 119 0.000

120 0.000

**Fiscal Impact Statement:**

There will be no increased costs to the state or its political subdivisions.

**Statement of Rationale:**

The amendments to the regulation are needed to set forth updated standards for setting reserves in connection with annuity contracts to ensure the adequacy and accuracy of reserves. The “2012 IAR Table” is a generational mortality table developed by the Society of Actuaries Committee on Life Insurance Research which includes an updated mortality table and a prescribed method of projecting future mortality rates. The National Association of Insurance Commissioners (NAIC) adopted revisions to the *NAIC Model Rule (Regulation) for Recognizing a New Annuity Table for Use in Determining Reserve Liabilities for Annuities* (#821) to incorporate the 2012 Individual Annuity Reserving Table. The proposed amendments to Regulation 69-37 will be based upon the amendments to the NAIC Model.