**Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force**

**Amendment Proposal Form**

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

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Clarify and introduce a third permissible technique for the calculation of company experience rates.

1. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

2020 Edition – Valuation Manual, VM-20 Section 9.C.2.d.vi.

1. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached Appendix.

1. State the reason for the proposed amendment? (You may do this through an attachment.)

See attached Appendix and Excel file.

#### Appendix

#### SECTION:

VM-20 Section 9.C.2.d.vi.

#### REDLINE:

9.C.2.d.vi. If the company uses the aggregate company experience for a group of mortality segments when determining the company experience mortality rates for each of the individual mortality segments in the group, the company shalluse one of the following methods:

a. Use techniques to further subdivide the aggregate experience into the various mortality segments (e.g., start with aggregate non-smoker and then use the conservation of total deaths principle, normalization or other approach to divide the aggregate mortality into super preferred, preferred and residual standard non-smoker class assumptions).

b. Use techniques to adjust the experience of each mortality segment in the group to reflect the aggregate company experience for the group (e.g., by credibility weighting the individual mortality segment experience with the aggregate company experience for the group).

c. Use a two-step sequential method, which

1) forms subgroups which are groups of mortality segments and are subsets of the aggregate class of mortality segments being aggregated,

2) uses techniques as in (b) to adjust the experience of each subgroup from (1) to reflect the aggregate company experience for the group and conserve deaths, and

3) finally, uses techniques as in (a) to further subdivide the subgroups’ adjusted experience from (2) into the various mortality segments while conserving each subgroup’s deaths determined in step (2)’s conservation of deaths.

For example, if mortality segments vary by sex, risk class, and face bands, then

1) segments that differ by face band are aggregated to form subgroups that vary just by sex and risk class,

2) the subgroups’ mortality experience is credibility weighted with the aggregate company experience for the group and normalized, and

3) the subgroups’ adjusted mortality experience are then subdivided into the various mortality segments based on credible, external face band relativities and conservation of deaths is applied to each subgroup’s normalized deaths determined in (2).

#### REASONING:

A minor point is clarity. “Either” can mean one or both. The intent is one of a) or b) but not both. The major issue is both a) and b) have weaknesses in contexts with high levels of granularity resulting in a large number of mortality segments such as 120 or 360 segments. For example consider a block with 360 mortality segments determined by 2 sexes × 6 risk classes × 5 face bands × 3 product types × 2 underwriting types (such as full and accelerated). A company may have very high credibility for each of 12 segments as determined by 2 sexes × 6 risk classes but have very low credibility for each of the 360 segments. Both a) and b) could produce company experience rates that negate the very reasons a company uses a high level of granularity. Using b) for example, all segment rates would be equal to the aggregate A/E rates, which is equivalent to no granularity. By applying b) to subgroups and applying a) to divide the subgroups, the proposed technique c) is more robust drawing upon a) and b)’s strengths while mitigating their weakness. If there is one subgroup which is the aggregate then a) is a special case of c). If each subgroup is a segment then b) is a special case of c). See the attached excel file that adds two examples to the NAIC examples for a) and b). Example 8 is an example of a correct way to apply c) and Example 9 is an incorrect way.