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**RE: CATASTROPHE RISK CHARGE IN THE P/C NAIC RISK-BASED CAPITAL (RBC) REQUIREMENTS – EXEMPTION CRITERIA**

In response to the request for comment on the exemption criteria for the calculation of catastrophe risk capital charges in the P/C Risk-Based Capital that are currently being tested by the National Association of Insurance Commissioners (NAIC), below we provide observations and recommendations that we hope you will find useful.

All elements of your work on incorporating the R6 and R7 catastrophe risk charges in RBC are critically important by themselves. They introduce, for the first time, catastrophe modeling into RBC and fill a significant gap in the minimum capital requirements calculation for many insurers. In addition, *the approach you are developing will likely become a template or at least an important reference point for directly incorporating other types of catastrophe risks in RBC*, should regulators consider it advisable in the future.

*Cyber Risk*, which is growing very rapidly, *Pandemics*, and *Tornadoes* are examples of such risks that may affect solvency of insurance companies. As new or more sophisticated models are being developed and validated, there is a greater likelihood we will be able to reflect other types of catastrophe risk, with greater precision, in RBC charges. Your work is particularly important in showing how catastrophe risk exposure can be best reflected in risk-based capital.

The comments below do not represent a view on the appropriateness of the framework itself or the way that the insurance industry is likely to use it. They are limited to the exemption criteria within the proposed testing framework. Most of the comments are intended to point out potential ambiguities in the language and not any substantive disagreement with the approach itself.

We believe that *clarity is essential* here given that the catastrophe risk issue is new and unfamiliar to some companies, and that the expertise in and understanding of catastrophe modeling differs significantly from company to company.

- The numbered list at the end of the third paragraph of the page titled “Calculation of Catastrophe Risk Charge R6 and R7 PR027 (for Informational Purposes Only)” of the instructions uses the language “Has a ratio of...” in the beginning of the second item and “Write...” in the beginning of the third item. Since both refer to ratios of similar kind, it may be best to use the same language in both cases. While unlikely, it is possible to misinterpret the current wording because the language used is not entirely consistent. This very minor comment is only intended to make sure that the instructions are very clear. We do not see it as a concern if the current draft language is preserved.
- In (3) of the same list, we suggest that the “and/or” language be clarified or replaced. The current draft makes it possible to misunderstand the “and/or” language and to conclude, by focusing on the “or” part, that a company that is under the 10% threshold for hurricanes and earthquakes separately but not together would be exempt (such as 9% for hurricane exposure coming from FL and 9% for earthquake exposure coming from CA for the same company, where the combined exposure for these two perils will then be 18% of the surplus, bringing it to the level above the 10% threshold).

This interpretation seems to be contrary to the intent of the regulators. The language used also raises the question of whether a company that has only miniscule exposure in one of these two categories has to perform calculations for both (such as a company with significant hurricane exposure in FL and miniscule earthquake exposure in CA).

- On the same page, for reasons of clarity we suggest that consistent language be used in (i) and (ii) in the description of Catastrophe Prone Areas. For example, both lists include Puerto Rico but one has it as part of a list of “states” while the other references “commonwealths or states.”
- We suggest that the reference to the New Madrid Fault Zone be clarified. The current reference in (ii) makes it clear that it is necessary to include only the locations at risk of New Madrid earthquakes, rather than the whole states parts of which have this risk exposure. The intent to include only specific locations is reasonable – to avoid imposing an unnecessary reporting burden on insurance companies.

However, it is unclear how these locations are defined and whether modeling should be done only for some pre-defined locations. This clarification is necessary also because the New Madrid Seismic Zone, as the term is used in this context, itself lacks a clear definition. While the fault system cuts across five states, the earthquake impact is typically considered to threaten parts of seven states, with some simulations showing potential significant damage in eight and even nine states.

Many maps of such simulations exist and can be obtained from US government sources such as the USGS and FEMA, but they differ depending on the purpose, type of modeling on which they are based, and what exactly has been modeled and displayed. We note that in disaster preparedness, boundaries of the New Madrid Seismic Zone are often based on maps such as the two-percent probability of exceedance in 50 years map of peak ground acceleration last updated, along with other seismic hazard maps, by the US government agencies in 2014.

- On the following page, “Calculation of Catastrophe Risk Charge R6 and R7,” we recommend that clarification be provided on whether all the questions should be answered and if not,

whether the order currently prescribed has to be followed. This includes the following specific recommendations:

- Clarify whether the company has to answer any of the questions in the Interrogatory if it is not claiming the exemption and is completing PR027 to calculate the R6 and R7 charges.
  - Clarify whether both (2a) and (2b) have to be answered if one of the answers is by itself sufficient to provide an exemption from calculating the R6 and R7 catastrophe charges.
  - Clarify whether it is necessary to answer the (1a), (1b) and (1c) questions if the exemption is already provided by answering either (2a) or (2b) affirmatively, regardless of the answers to the (1a), (1b) and (1c) questions. Please note that the current language seems to have this requirement.
  - Ensure that the filing software does not force insurance companies to provide answers to questions where such answers are not mandatory.
- Improve clarity and avoid any misunderstanding by using consistent language throughout the questionnaire (Interrogatory). For example, insert the words “inter-company” before the words “a quota share reinsurance agreement” in (1c) to be fully consistent with the language of (1b).

Please note that these comments and recommendations represent my personal views and are not intended to reflect the position of the P/C Risk-Based Capital Committee of the American Academy of Actuaries, which I chaired until approximately a year ago, or the CAS Task Force on Cyber Risk, which I currently chair. These personal views should not be seen as a public policy statement, nor as a position taken by any of these two organizations.

Sincerely,

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