

Catastrophe Risk (E) Subgroup
March 3, 2012 National Meeting

ATTACHMENT 1

SUPPORTING DETAIL FOR AGENDA ITEMS

A. FORMULA CONCERNS

1. Status Report:

a. Proposal for design of a catastrophe risk charge: AGREEMENTS SO FAR: note: red italicized and underlined text represents updates from last meeting's report:

- i. Set **hurricane** catastrophe risk charge equal to the insurer's once-in-100-years modeled hurricane catastrophe losses, determined on a Value-at-Risk (VaR) basis, using the insurer's property exposures as input to the model.
 1. Allowable models are the three principal commercially available models: RMS, AIR or EQECAT. Any one model, or a combination of the results of two or three models, may be used.
 2. Model choices and key modeling parameter choices must be the same as the insurer uses in its own internal catastrophe risk management process.
 3. Risk charge is net of reinsurance.
- ii. Set **hurricane** contingent credit risk charge (for the risk of uncollectible reinsurance due to the catastrophe event) equal to 10% of the modeled ceded loss due to the same once-in-100-years modeled hurricane catastrophe losses; modeled ceded loss is the difference between modeled gross loss and modeled net loss. Affiliated reinsurance shall be treated in the same manner as it is treated in the determination of the credit risk charge in the general RBC formula: all US affiliated reinsurance shall be excluded, and all non-US affiliated reinsurance shall be included. *NOTE: the 10% charge should be considered a place-holder. There is agreement that the same charge should be used as is used for the credit risk for reinsurance receivables, but also concern that 10% might be too high. The Subgroup supports the efforts underway by the AAA to re-evaluate credit risk charges for the Capital Adequacy Task Force, and has asked that this work be expedited.*
- iii. Set **earthquake** catastrophe risk charge in a similar manner to the determination of the hurricane catastrophe risk charge, using the same once-in-100-years VaR standard.
- iv. Set **earthquake** contingent credit risk charge in a similar manner to the determination of the hurricane contingent credit risk charge.

- v. Include the **hurricane** catastrophe risk charge and the **earthquake** catastrophe risk charge as separate elements within the square root component of the Total RBC After Covariance computation.
 - 1. Contingent credit risk charges are considered 100% correlated with corresponding catastrophe risk charges.
 - 2. **Hurricane** and **earthquake** catastrophe risk charges are considered completely independent of each other and independent of all other RBC risk charge elements.
 - 3. The new covariance adjustment would work as follows:
 - a. The **hurricane** catastrophe risk charge net of reinsurance and **hurricane** contingent credit risk charge are added together, then squared.
 - b. The **earthquake** catastrophe risk charge net of reinsurance and **earthquake** contingent credit risk charge are added together, then squared.
 - c. These two values are added to the sum of the squares of all the other RBC risk elements, and finally the square root of this new total is taken.
- vi. *The catastrophe risk charge will not be tax-effected, in order to maintain consistency with the overall RBC formula.*

- b. Status of Formula Development: *a second draft is presented with the agenda materials.*

2. Issues to Discuss:

- a. Consider methods to remove catastrophe claims from underwriting risk charges
 - i. Estimate historical industry hurricane and earthquake losses (using PCS data) and remove from historical industry property line loss ratios used in deriving risk charges for Underwriting Risk - Premiums. *Note: PCS data is not complete and may not represent the majority of the industry, so its sufficiency is considered questionable.*
 - ii. *Obtain actual historical industry hurricane and earthquake losses by aggregating catastrophe claims data reported by insurers to the NAIC, and remove from historical industry property line loss ratios used in deriving risk charges for Underwriting Risk - Premiums.*
 - iii. Consider developing industry property line loss ratios for hurricane states vs. earthquake states vs. all other states.
 - iv. For company loss ratios, consider:
 - 1. Leaving them unaltered, due to current lack of regulatory reporting requirements for catastrophe claims; or

2. Requiring companies to report catastrophe claims to regulators, since companies currently report them to statistical reporting agencies.
- v. An alternative approach to removal of “double-counting” from existing premium risk calculation
 1. Reduce individual insurer premium amounts by a cat premium proxy equal to the modeled average annual loss grossed up for expenses
 2. Reduce individual insurer loss amounts by actual catastrophe losses
 3. Adjust premium risk capital charge to remove impact of historical cat events
 - a. Should be done as part of AAA project to update all risk charges in RBC model
 - b. Current charges date from early 1990’s and do not reflect impact of hurricane activity of last two decades
 - c. Can attempt to adjust current factors by removing impact of EQ and HU events prior to 1990, but would be limited by availability of original data and method descriptions
 - d. Need to consider impact of fire-following earthquake

b. Consider whether to give credit for catastrophe bonds

B. IMPLEMENTATION CONCERNS

1. Status Report:

a. Status of Referral to Examination Oversight Task Force: Referral letter has been approved by Property-Casualty RBC Working Group and Capital Adequacy Task Force and has been submitted to Examination Oversight (E) Task Force.

i. Items referred to Examination Oversight (E) Task Force:

1. Request examiners to validate that insurer property data used in modeling is accurate and complete.
2. Request examiners to validate that insurer modeling, assumptions and data are the same in RBC calculation as are used in insurer’s own catastrophe risk management process.

ii. Examination Oversight (E) Task Force has delegated our referral to the Financial Examiners’ Handbook Technical Group (FEHTG).

1. *The FEHTG met by conference call on February 15 and discussed our referral. They noted that it will most likely not be necessary to include examination procedures for our subject matter until the 2014 handbook is*

published, so they will be looking into the subject but will not have this work on a fast track this year.

2. We will continue to participate in their future calls on the subject.

2. Issues to Discuss:

- a. Consider ways to “beta test” implementation of a catastrophe risk charge
 - i. Solicit volunteer insurers to produce cat risk charges (at various safety levels) and ex-cat underwriting risk charges and then compare the resulting RBC to their current RBC.
 - ii. Require companies to include in their upcoming annual RBC reports, for informational purposes, the RBC that would result from application of the above catastrophe risk charge procedures.
- b. Consider other implementation concerns
 - i. Exempting insurers with minimal catastrophe exposures
 - ii. What information to require in an expanded confidential RBC Report
 1. Modeled losses (net, ceded and gross) at other return periods, such as worst year in 250, 500, and perhaps 1,000. *This is included in the draft formula pages.*
 2. Attestation that modeling data and analysis used to determine RBC cat risk charges are the same as what is used in insurer’s own catastrophe risk management process.
 3. Discussion of treatment of various key modeling assumptions, including rationale for treatment.
 4. Discussion of process applied and steps taken to ensure completeness and accuracy of data used in catastrophe modeling.
 - iii. Use of insurer-developed catastrophe models
 - iv. Regulator options for handling RBC submissions that contain inadequately supported cat risk charges
 1. Refusal to accept RBC until issues are resolved.
 2. Mandatory inclusion of a blunt, highly conservative cat risk charge.