



Date: 4/15/24

*Virtual Meeting*

**CATASTROPHE RISK (E) SUBGROUP**

Tuesday, April 23, 2024

3:00 – 4:00 p.m. ET / 2:00 – 3:00 p.m. CT / 1:00 – 2:00 p.m. MT / 12:00 – 1:00 p.m. PT

**ROLL CALL**

Wanchin Chou, Chair	Connecticut	Alexander Vajda	New York
Virginia Christy, Vice Chair	Florida	Tom Botsko	Ohio
Rolf Kaumann / Eric Unger	Colorado	Andrew Schallhorn	Oklahoma
Travis Grassel	Iowa	Will Davis	South Carolina
Sandra Darby	Maine	Miriam Fisk	Texas
Melissa Robertson	New Mexico		

NAIC Support Staff: Eva Yeung

**AGENDA**

1. Consider Adoption of Proposal 2023-17-CR (Climate Scenario Analysis) Attachment A  
— *Wanchin Chou (CT)*
2. Discuss Severe Convective Storm Impact Analysis— *Wanchin Chou (CT)*
3. Discuss Wildfire Peril Impact Analysis— *Wanchin Chou (CT)*
4. Discuss Any Other Matters Brought Before the Subgroup— *Wanchin Chou (CT)*
5. Adjournment

## 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 checked="" type="checkbox"/> Catastrophe Risk (E) Subgroup             | <input type="checkbox"/> P/C RBC (E) Working Group         | <input type="checkbox"/> Longevity Risk (A/E) Subgroup                      |
| <input type="checkbox"/> Variable Annuities Capital. & Reserve (E/A) Subgroup | <input type="checkbox"/> Economic Scenarios (E/A) Subgroup | <input type="checkbox"/> RBC Investment Risk & Evaluation (E) Working Group |

<p style="text-align: right;">DATE: <u>1/23/24</u></p> <p><b>CONTACT PERSON:</b> <u>Dan Daveline</u></p> <p><b>TELEPHONE:</b> _____</p> <p><b>EMAIL ADDRESS:</b> <u>ddaveline@naic.org</u></p> <p><b>ON BEHALF OF:</b> <u>Solvency Workstream of the Climate &amp; Resiliency (EX ) Task Force</u></p> <p><b>NAME:</b> _____</p> <p><b>TITLE:</b> _____</p> <p><b>AFFILIATION:</b> _____</p> <p><b>ADDRESS:</b> _____</p>	<p style="text-align: center;"><b>FOR NAIC USE ONLY</b></p> <p>Agenda Item # <u>2023-17-CR</u></p> <p>Year <u>2024</u></p> <p style="text-align: center;"><b>DISPOSITION</b></p> <p><b>ADOPTED:</b></p> <p><input type="checkbox"/> TASK FORCE (TF) _____</p> <p><input type="checkbox"/> WORKING GROUP (WG) _____</p> <p><input type="checkbox"/> SUBGROUP (SG) _____</p> <p><b>EXPOSED:</b></p> <p><input type="checkbox"/> TASK FORCE (TF) _____</p> <p><input type="checkbox"/> WORKING GROUP (WG) _____</p> <p><input checked="" type="checkbox"/> SUBGROUP (SG) <u>01/29/2024 03/17/24</u></p> <p><b>REJECTED:</b></p> <p><input type="checkbox"/> TF <input type="checkbox"/> WG <input type="checkbox"/> SG _____</p> <p><b>OTHER:</b></p> <p><input type="checkbox"/> DEFERRED TO _____</p> <p><input type="checkbox"/> REFERRED TO OTHER NAIC GROUP _____</p> <p><input type="checkbox"/> (SPECIFY) _____</p>
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#### IDENTIFICATION OF SOURCE AND FORM(S)/INSTRUCTIONS TO BE CHANGED

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

#### DESCRIPTION/REASON OR JUSTIFICATION OF CHANGE(S)

The Solvency Workstream of the Climate & Resiliency (EX) Task Force was tasked with considering the development of climate scenario analysis. The workstream held three public panels on the topic in 2022 and in 2023 learned that commercial CAT modelers have products known as "Climate Conditioned Catalogs" that reflect adjusted frequency and severity for certain time horizons (e.g. 2040 or 2050) that if compared side by side with existing RBC data in PR027 would provide an estimate of climate change for hurricane and wildfire. The information is intended to be useful for domestic regulators holding conversations with insurers that may have a greater degree of risk levels for these perils.

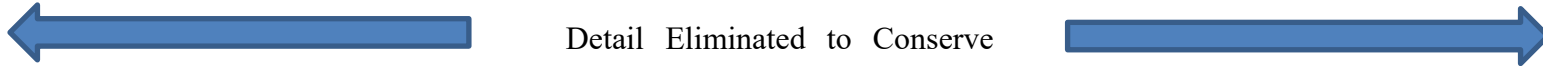
#### Additional Staff Comments:

4/22/24 – the proposal was revised based on the regulator inputs.

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

**Revised 2-2023**

**CALCULATION OF CATASTROPHE RISK CHARGE RCAT  
PR027A, PR027B, PR027C, PR027, PR027B2, PR027C2 AND PR027INT**



**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE  
PR027B2, PR027C2**

These disclosures aim at collecting the impact of climate related risks on the modeled losses for the perils of hurricane and wildfire that have been used in PR027B and PR027C respectively. These disclosures will be effective for YE 2024, YE 2025 and YE 2026 reporting. The intent of these disclosures is for informational purposes only and not to determine a new RCAT charge. The impact should be estimated using the following specific instructions:

- Representative Concentration Pathway (RCP) represents a set of projections that are meant to serve as an input for climate modeling, pattern scaling and atmospheric chemistry modeling. For purposes of these instructions, companies should utilize an RCP of 4.5 (or equivalent SSP).
- The impact should be assessed separately under two-time horizons 2040 and 2050.
- Assume a static in-force book of business at year end (no changes to book of business, to reinsurance strategy or to total insured value (TIV) inflation over the projected time horizon).
- The impact can be modeled using either a Climate Conditioned Catalog developed by a commercial CAT model vendor or equivalent view of climate risk internally developed by the insurer or that is the result of adjustments made by the insurer to vendor provided catalogs to represent the own view of climate risk.

The same basic information is required to be completed for this PR027B2 and PR027C2 as the previous pages PR027B and PR027C, including specifically as follows:

Column (1) – Direct and Assumed Modeled Losses

These are the direct and assumed modeled losses per the first footnote. Include losses only; no loss adjustment expenses. For companies that are part of an inter-company pooling arrangement, the losses in this column should be consistent with those reported in Schedule P, i.e. losses reported in this column should be the gross losses for the pool multiplied by the company's share of the pool.

Column (2) – Net Modeled Losses

These are the net modeled losses per the footnote. Include losses only; no loss adjustment expenses.

Column (3) - Ceded Amounts Recoverable

These are the modeled losses ceded under any reinsurance contract. Include losses only, no loss adjustment expenses, and should be associated with the Net Modeled Losses.

In addition, the insurer should provide the following information about the view of climate risk used to determine the climate conditioned modeled losses under each time horizon:

- If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog.
- If it is internally developed by the company or developed in collaboration with external climate specialists and/or reinsurance brokers, provide a brief description of assumptions/adjustments made including the sources of climate science research used

**CALCULATION OF CATASTROPHE RISK CHARGE FOR HURRICANE PR027B**

Hurricane	Reference	Modeled Losses			
		(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable	(4)†† Ceded Amounts Recoverable with zero Credit Risk Charge
(1) Worst Year in 50	Company Records				
(2) Worst Year in 100	Company Records				
(3) Worst Year in 250	Company Records				
(4) Worst Year in 500	Company Records				
(5) <b>Worst Year in 1000</b>	<b>Company Records</b>				
				(5) Y/N	
(6) Has the company reported above, its modeled hurricane losses using an occurrence exceedance probability (OEP) basis?					
		(6) Amount	Factor	(7) RBC Requirement (C(6) * Factor)	
(7) Net Hurricane Risk	L(2) C(2)		0 1.000	0	
(8) Contingent Credit Risk for Hurricane Risk	L(2) C(3) - C(4)		0 0.018	0	
(9) Total Hurricane Catastrophe Risk (AEP Basis)	If L(6) C(5) = "N", L(9) C(6) = L(7) C(7)+ L(8) C(7), otherwise "0"		0 1.000	0	
(10) Total Hurricane Catastrophe Risk (OEP Basis)	If L(6) C(5) = "Y", L(10) C(6) = L(7) C(7)+ L(8) C(7), otherwise "0"		0 1.000	0	
(11) Total Hurricane Catastrophe Risk	L(9) C(7) + L(10) C(7)			0	

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using one of the following NAIC approved third party commercial vendor catastrophe models - AIR, CoreLogic, RMS, KCC, the ARA HurLoss Model, or the Florida Public Model for hurricane; or a catastrophe model that is internally developed by the insurer and has received permission of use by the lead or domestic state. The insurance company's own insured property exposure information should be used as inputs to the model(s). The insurance company may elect to use the modeled results from any one of the models, or any combination of the results of two or more of the models. Each insurer will not be required to utilize any prescribed set of modeling assumptions, but will be expected to use the same data, modeling, and assumptions that the insurer uses in its own internal catastrophe risk management process. An attestation to this effect and an explanation of the company's key assumptions and model selection may be required, and the company's catastrophe data, assumptions, model and results may be subject to examination.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

††Column (4) is modeled catastrophe losses that would be ceded to the categories of reinsurers that are not subject to the RBC credit risk charge (i.e., U.S. affiliates and mandatory pools, whether authorized, unauthorized, or certified).

Denotes items that must be manually entered on the filing software.

**CALCULATION OF CATASTROPHE RISK CHARGE FOR WILDFIRE PR027C  
(For Informational Purposes Only)**

Wildfire	Reference	Modeled Losses			
		(1) <u>Direct and Assumed</u>	(2) <u>Net</u>	3† <u>Ceded Amounts Recoverable</u>	(4)†† <u>Ceded Amounts Recoverable with zero Credit Risk Charge</u>
(1) Worst Year in 50	Company Records				
(2) Worst Year in 100	Company Records				
(3) Worst Year in 250	Company Records				
(4) Worst Year in 500	Company Records				
(5) <b>Worst Year in 1000</b>	<b>Company Records</b>				
				(5) <u>Y/N</u>	
(6) Has the company reported above, its modeled wildfire losses using an occurrence exceedance probability (OEP) basis?					
				(6) <u>Amount</u>	(7) <u>RBC Requirement (C(6) * Factor)</u>
	<u>Reference</u>			<u>Factor</u>	
(7) Net Wildfire Risk	L(2) C(2)			0.1000	0
(8) Contingent Credit Risk for Wildfire Risk	L(2) C(3) - C(4)			0.0018	0
(9) Total Wildfire Catastrophe Risk (AEP Basis)	If L(6) C(5) = "N", L(9) C(6) = L(7) C(7)+ L(8) C(7), otherwise "0"			0.1000	0
(10) Total Wildfire Catastrophe Risk (OEP Basis)	If L(6) C(5) = "Y", L(10) C(6) = L(7) C(7)+ L(8) C(7), otherwise "0"			0.1000	0
(11) Total Wildfire Catastrophe Risk	L(9) C(7) + L(10) C(7)				0
<u>Disclosure in lieu of model-based reporting:</u>				(8) <u>Direct and Assumed</u>	(9) <u>Net</u>
(12) For a company qualifying for the exemption under PR027INT C (10), complete 11a through 11c below:					
a. Provide the company's gross and net 1-in-100-year wildfire losses on a best estimate basis in lieu of model-based reporting.					
b. Provide details on how the company estimated the amounts shown in 11a.					
c. Provide a narrative disclosure about how the company manages its wildfire risk.					

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using one of the following NAIC approved third party commercial vendor catastrophe models - AIR, RMS, or KCC, or a catastrophe model that is internally developed by the insurer and has received permission of use by the lead or domestic state. The insurance company's own insured property exposure information should be used as inputs to the model(s). The insurance company may elect to use the modeled results from any one of the models, or any combination of the results of two or more of the models. Each insurer will not be required to utilize any prescribed set of modeling assumptions, but will be expected to use the same data, modeling, and assumptions that the insurer uses in its own internal catastrophe risk management process. An attestation to this effect and an explanation of the company's key assumptions and model selection may be required, and the company's catastrophe data, assumptions, model and results may be subject to examination.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

†† Column (4) is modeled catastrophe losses that would be ceded to the categories of reinsurers that are not subject to the RBC credit risk charge (i.e., U.S. affiliates and mandatory pools, whether authorized, unauthorized, or certified).

Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR HURRICANE PR027BI  
(For Informational Purposes Only)**

Climate Conditioned Modeled Losses for 2040

Hurricane	Reference	(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

(7) If it is internally developed by the company or developed in collaboration with external climate specialists and/or reinsurance brokers, provide a brief description of assumptions/adjustments made including the sources of climate science research used:

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor-catastrophe model, or combination of models used to calculate the CAT Risk Charge.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR HURRICANE PR027BII**  
**(For Informational Purposes Only)**

Climate Conditioned Modeled Losses for 2050

Hurricane	Reference	(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

- (6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog
- (7) If it is internally developed by the company or developed in collaboration with external climate specialists and/or reinsurance brokers, provide a brief description of assumptions/adjustments made including the sources of climate science research used:

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor-catastrophe model, or combination of models used to calculate the CAT Risk Charge.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR WILDFIRE PR027CI**  
 (For Informational Purposes Only)

Climate Conditioned Modeled Losses for 2040

Wildfire	Reference	(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

- (6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog
- (7) If it is internally developed by the company or developed in collaboration with external climate specialists and/or reinsurance brokers, provide a brief description of assumptions/adjustments made including the sources of climate science research used:

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor catastrophe model, or combination of models used to calculate the CAT Risk Charge.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

Denotes items that must be manually entered on the filing software.



**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR WILDFIRE PR027CII**  
 (For Informational Purposes Only)

Wildfire	Reference	Climate Conditioned Modeled Losses for 2050		
		(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

[Redacted]

(7) If it is internally developed by the company or developed in collaboration with external climate specialists and/or reinsurance brokers, provide a brief description of assumptions/adjustments made including the sources of climate science research used:

[Redacted]

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor catastrophe model, or combination of models used to calculate the CAT Risk Charge.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

[Redacted] Denotes items that must be manually entered on the filing software.

March 29, 2024

Wanchin Chou  
 Chair, NAIC Catastrophe Risk (E) Subgroup  
 Via email to eyeung@naic.org

RE: March 17, 2024 discussion of Proposal 2023-17-CR (Climate Scenario Analysis)

Thank you for the opportunity to participate in the discussion of this proposal. My apologies again for not being able to provide comments during an earlier exposure period, as I have not been following all the NAIC developments and proposals since my retirement last March 2023, and was not aware of this proposal until after the end of the formal comment period.

The following is a written version of my analysis of the proposal since I became aware of it. *(Note that this reflects my personal analysis and views as an experienced professional in this area, and does not represent any official position of any group I have been associated with, nor am currently associated with.)*<sup>1</sup>

My comments cover two broad areas of the proposal. The first area is suggested improvements to the proposal if the requirement for additional data capture remains with P&C RBC filers. The second area concerns the degree to which the proposal meets the stated objectives, versus other alternative approaches for data capture. Both are based on the stated objectives in the Blanks proposal to:

- Provide an estimate of climate change for the hurricane and wildfire perils, and
- Be useful for domestic regulators holding conversations with insurers that may have a greater degree of risk levels for these perils.

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<sup>1</sup> I have been retired since March 2023 from The Travelers Companies, Inc., and since then I have been an outsider with regard to their operations. I am currently an unpaid volunteer for the following:

- International Actuarial Association (with current roles including serving as a co-vice chair of the Insurance Regulation Committee and observer for the Enterprise and Financial Risk Forum, Resource and Environment Forum, Insurance Accounting Committee.)
- Federal Reserve Insurance Policy Advisory Committee (IPAC) member
- American Academy of Actuaries (with current roles including Climate Related Financial Disclosures Subcommittee, Prudential Regulation Committee, Financial Reporting Committee, as well as an Interested Party for Casualty Practice Council monthly calls)
- Casualty Actuarial Society – International Actuarial Association Working Group, as well as a past President of the CAS.

Past experience includes participation in NAIC P&C RBC developments since the early 1990s, including past chair of the Academy P&C RBC Committee and attendance at NAIC P&C RBC events from the mid-1990s until late 2022, as well as peer review of draft ORSA reports, and capital management work.

**A. Suggested improvements to the proposal if the onus for the additional data capture remains with P&C RBC filers**

There are three areas where I believe the proposal should be modified if the data capture would remain in the current suggested format. These are (1) the treatment of reinsurance, (2) the identification of the geographic location of the risk, and (3) the impact of residual markets on the usefulness of the data. (I would also like to comment on the suggested addition of 1-in-1000 PMLs for the data capture.)

**1. Treatment of reinsurance**

The proposal seeks to capture PML values for 2040 and 2050 that are both gross and net of reinsurance. In doing so, the proposed model runs would be applied to the current building exposures and coverage terms, as well as the current reinsurance program. As discussed in the proposed Cat Risk Reinsurance Program Interrogatory (2013-13-CR), an insurer's catastrophe reinsurance program is a critical part of an their catastrophe management program for those with material catastrophe risk, with that reinsurance plan subject to annual changes as the underlying gross (of reinsurance) exposure changes. As such, comparing gross exposures and risks for periods 15 to 25 years in the future to reinsurance programs not designed for those exposures and related risks will not provide useful information. If retained, the currently proposed 2040 and 2050 PML data should be restricted to gross data only.

As an aside, during the March 8, 2024 call of the Solvency Workstream of the Climate and Resiliency Task Force, the question was raised as to whether the disclosure would be by group or by entity. The answer was that the disclosure would be by entity. This should be clarified to be consistent with the current disclosure for the Rcat charge, where the disclosure of gross PMLs for a pool member is the pool percentage applied to the pool's gross PMLs.

**2. Identification of the geographic location of the risk concentration**

In having a conversation about greater risk levels due to climate change, either with regard to an individual insurer or society at large, an important question is where is that risk higher. That requires information as to the location of the increased risk or the location of the concentration. The current proposal does not provide such information.

In producing a loss exceedance curve, a catastrophe model run takes the results from the entire event catalog and groups the simulated results by size (with the associated probability). The simulated results are not grouped by location. As a result, the 1-in-100 PML may be from a different location (say hypothetically, Texas coast) than the 1-in-250 PML (say hypothetically, the New Jersey shore). In fact, the 1-in-100 PML may be for a different location than the 1-in-101 PML. Similarly, the 1-in-100 PML from a 2024 event catalog may be from a different location than the 1-in-100 PML from the 2040 event catalog.

As stated earlier, any conversation about potential overconcentration in an area or excessive risk from an area has to include discussion about where that risk resides geographically. If the reported PMLs do not directly provide that information, then the location of the concerning risk will have to be obtained in some other way. Either way, an insurer, or a strategic planner for climate change issues for a region, has to determine where the risk resides. It would be most helpful if the proposed data capture provided this information directly.

This can be addressed by modifying the existing proposal to address this missing data need. That may take time, but it would be addressing a need that has to be addressed in some form regardless of the approach. The existing proposal could either be delayed until an approach is determined to meet this need, or the existing proposal could go ahead as is but in a deficient form for now. (My personal preference is generally to take more time to get an approach that meets the need, rather than implement a proposal immediately that I know does not yet meet the need.)

### 3. Impact of residual markets

The current model runs, if complete, would also include the impact of residual market assessments where they exist. Where the residual market cedes all its losses and premium to the voluntary market, then the current model runs would include an estimate based on current exposures and the current size of the residual market. Those estimates may be materially wrong for the future time periods, perhaps very materially wrong. This is due to the likely increase in residual market volumes in areas where climate change stresses the voluntary market.

Where the residual market results are not included in the voluntary writer results (e.g., where a separate entity exists in the state that only cedes a deficiency to the voluntary market such as Florida's Citizens insurance company), the industry results do not include a portion of the climate change impact.

In any event, material gaps may exist in the data capture for the purposes of determining climate change impacts<sup>2</sup>.

Ideally, the data capture would include similar model runs for the residual markets for the same event catalogs, with the residual market impact isolated in the current Rcat charge and excluded from the future event catalog data. Such an approach would produce cleaner data that is more amenable to useful analysis (as assumptions as to current residual market considerations are not explicitly captured in the current Rcat process, at least in numeric form). Such an approach would likely benefit from more discussion and analysis, including an ad hoc group representing modelers, industry, regulators and NAIC staff, but would delay the start date for the data capture. Moving ahead without addressing this issue, however, risks capturing faulty data for the purposes envisioned.

#### Aside – capture of 1-in-1000 PMLs

There is a reason why some choose not to disclose such results, and why others caveat such results – they are highly speculative and not amenable to reasonable verification<sup>3</sup>. So while reporting of these values is not an administrative burden for RBC report preparers, the values reported are not viewed as being that reliable, and hence not useful. I would recommend against collecting information not viewed as sufficiently reliable due to potential misuse<sup>4</sup>.

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<sup>2</sup> Note also that the proposal tries to capture only those losses covered by traditional insurance and not by federal programs, such as hurricane storm surge losses covered by the National Flood Insurance Program (NFIP).

<sup>3</sup> In the words of the TRV 10-K for year-end 2023, *"In the [loss exceedance] tables [shown] ..., the uncertainty associated with the estimated threshold loss amounts increases significantly as the likelihood of exceedance decreases. In other words, in the case of a relatively more remote event (e.g., 1-in-1,000), the estimated threshold loss amount is relatively less reliable."*

<sup>4</sup> Note that this uncertainty is even higher for the 2040 and 2050 estimates, even for PML levels consistent with the current Rcat reporting. This is because of the additional uncertainty provided by the greenhouse gas (GHG) emissions forecast embedded in the 2040 and 2050 event catalogs. Most future GHG scenarios I have seen lately

## **B. Does the proposal meet the stated objectives?**

A major consideration in producing an estimate of climate change impacts on potential solvency is determining the relevant entity. Is the relevant entity for solvency (or viability) the individual insurers, the overall insurance market, or society in general? In other words, is the stated objective focusing on the wrong entity for this analysis. Another major consideration concerns the drivers of that change.

### *1. The relevant entity*

The insurance industry has been compared to the canary in the coal mine with regard to the communication of risks to society in general. In the U.S., however, there is a major difference between the canaries used in actual coal mines of the past and insurance companies. That difference is that the coal mine canaries were in locked cages, while the insurers are not. As the risk increases, insurers would be expected to adapt and take action in, at most, a few years rather than decades. Insurers would be expected to fly out of the cage and out of the danger area, thereby reducing their insolvency risk and essentially transferring it to residual markets or society in general. Thus scenario analysis that looks years beyond when insurers would be expected to act would not be a reliable indicator of insurer solvency risk. A more relevant scenario for individual insurers would be the climate expected in 5 years, not 15 or 25. (The speed with which the California property insurers reacted to the increased wildfire risk in that state illustrates this point -- it was not decades.)

For time horizons of 15 to 25 years in the future, any projection would have to assume material reactions by the voluntary insurance market before the climate reached those levels. Such scenarios would probably reflect a much higher residual market volume, so the relevant entity should probably be either the overall insurance market (state by state, or region by region), or society in general.

### *2. Major drivers of the change in natural catastrophe losses*

To begin with, note that the plural term “drivers” is used here. It is a mistake to view this issue as having only one driver. As stated in the Business Insurance of March 1, 2024<sup>5</sup>, the principal cause of rising insured convective storm losses has been increases in exposure rather than meteorological shifts (i.e., climate change)<sup>6</sup>. The drivers listed in the Business Insurance article include:

- Exposure growth – new construction built in “harm’s way”.
- Inflation – increases in the costs of rebuilding. This is caused both by general inflation and by inflation in the cost of new materials and designs that add to rebuilding costs (e.g., solar panels added to roofs).
- Climate change

Similarly, exposure growth (in both the past and the forecasted future) is considered to be a major issue for wildfire<sup>7</sup> and hurricane risk<sup>8</sup>. The current proposal is focused on only one facet of the future climate

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show the results from multiple future scenarios, not just a single scenario such as seems to be embedded in the single 2040 and single 2050 event catalogs.

<sup>5</sup> The article was titled “Exposure growth drives costly storm losses” and was posted on March 1, 2024 at 12:00am CST.

<sup>6</sup> Exposure growth is also a factor in trends in the level of insured hurricane losses.

<sup>7</sup> See <https://www.oliverwyman.com/our-expertise/insights/2019/sep/the-burning-issue-managing-wildfire-risk.html>

<sup>8</sup> See <https://www.preventionweb.net/news/ian-revisited-disentangling-drivers-us-hurricane-losses>

change impact, ignoring the fact that a more perilous future climate will likely have more buildings to impact, with higher repair costs for those buildings.

The current proposal assumes no change in damageability/vulnerability to the current building stock, but there are multiple reasons why the vulnerability is not static. This includes:

- New building materials. For example, many roofs have only a 25-year lifespan. Therefore, one would expect that a majority of current exposures would have roof replacements before 2050, if not before 2040, with at least some developments over that time period with regard to roofing materials and roof replacement design. That should ideally lower vulnerability. (Roof design and materials have impacts on both windstorm and wildfire losses.)
- Enhancements to existing structures. For example, the use of solar panels on roofs is expanding. A roof with solar panels generally increases the severity of losses during a natural disaster.<sup>9</sup>
- New building codes. As modifications are made to existing homes or as repair work is done, this work done under current and future building codes will change the impact of climate change. Ideally this should reduce vulnerability<sup>10, 11</sup>

### 3. *Implications*

The current proposal is not measuring the impact of climate change on the future solvency for current insurers, as it does not measure those insurers' likely exposures and the likely damageability of that future exposure. If climate change impacts their solvency, then they are likely to take action (and reduce their "at risk" exposure) well before the time periods being evaluated (2040 and 2050). It also does not provide sufficiently useful guidance for a discussion of where concentration exists, as neither the current PML disclosure nor the proposed 2040 and 2050 disclosures would identify the locations with greatest risk and would not allow for comparisons of how the risk increased for a particular geographic area.

The current proposal might have value for identifying the climate change impact for society in general, but only if it captured data for how the risk increased for particular geographic areas. That geographic area risk change could be captured if model runs produced data for set geographic locations for the current timeframe as well as future timeframes, ideally using industrywide exposure data. That data might also be captured if the insurer output from the proposal was by geographic data, with the understanding that the data only had value when accumulated across the industry (as it would not be a measure of the individual insurer solvency, as mentioned above). But if the industry data for a set

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<sup>9</sup> This was noted in the March 1, 2024 article in Business Insurance titled "*Green building owners confront insurance hurdles*"

<sup>10</sup> Note that after each natural disaster, more and more of the current building stock will be upgraded to more recent building codes. The most vulnerable areas are those that haven't seen a natural disaster for a long time. When a disaster hits such an area, a large portion of the building stock is likely to have been built under now outdated building codes. The building stock after rebuilding occurs is likely to be materially less vulnerable. This is commonly seen in post-disaster photos of areas hit by multiple disasters in the past. The buildings still standing or relatively untouched post-disaster in the more recent photos are likely to be those recently built under current building codes. So the more frequently an area is hit by natural disasters, the more its vulnerability is reduced.

<sup>11</sup> Note that FEMA has recently published a National Risk Index with an explicit component to measure community resilience. While focused on just current resilience, the work behind this index might be of interest to the NAIC's Solvency Workstream of the Climate and Resiliency Task Force, if they are not already aware of it. The community resilience component of FEMA's National Risk Index is explained here <https://hazards.fema.gov/nri/community-resilience>.

geographic region was to be captured, then there needs to be a way to also capture the exposures coming from the current residual markets. In addition, any analysis of total industry exposure for a set geographic region also has to consider the impact of future construction in those regions<sup>12</sup>.

Once again, thank you for the opportunity to contribute to this discussion<sup>13</sup>. I also am willing to assist in any future discussions on this matter and am available to answer any questions people may have on this comment letter.

Regards,  
Ralph S. Blanchard III, FCAS, MAAA  
[rsblanchardiii@gmail.com](mailto:rsblanchardiii@gmail.com)  
860-424-7869 (cell)  
76 Wynding Hills Road  
East Granby, CT 06026

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<sup>12</sup> Ideally, data on the impact of climate change on future exposures would help public policy making with various societal actions to take in anticipation of the future, including:

- Possible infrastructure improvements
- Building code changes
- Land use policies
- Residual market modifications.

<sup>13</sup> And thanks to Steve Kulk, Barret Thompson and Amy Angell for their assistance in reviewing a draft of this comment letter.

**From:** Ralph Blanchard <rsblanchardiii@gmail.com>  
**Sent:** Monday, April 15, 2024 5:29 PM  
**To:** Yeung, Eva <EYeung@naic.org>  
**Subject:** Re: 03\_Revised Blank - Ralph Blanchard.xlsm

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks Eva,

Those are the two columns that would be deleted. The reason for the proposal would be: *"This is a proposed modification to the current proposal, removing the impact of ceded reinsurance from the current proposal for 2040 and 2050 projections, as ceded reinsurance programs are designed to fit the gross exposure and capital level existing for the period of the gross exposure. As such, the reinsurance program in place for 2024 would likely be very different from the one in place for 2040 or 2050. Assuming no change in the reinsurance program would produce data that would be misleading (and as such should not be used)."*

Ralph



**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR HURRICANE PR027BI  
(For Informational Purposes Only)**

Climate Conditioned Modeled Losses for 2040

Hurricane	Reference	(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

[Redacted]

(7) If it is internally developed by the company, provide a brief description of assumptions/adjustments made

[Redacted]

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor-catastrophe model, or combination of models used to calculate the CAT Risk Charge.

~~† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).~~

[Redacted] Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR HURRICANE PR027BII  
(For Informational Purposes Only)**

**Climate Conditioned Modeled Losses for 2050**

Hurricane	Reference	(1) <u>Direct and Assumed</u>	(2) <u>Net</u>	3† <u>Ceded Amounts Recoverable</u>
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

(7) If it is internally developed by the company, provide a brief description of assumptions/adjustments made

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor-catastrophe model, or combination of models used to calculate the CAT Risk Charge.

† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).

Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR WILDFIRE PR027CI**  
**(For Informational Purposes Only)**

Climate Conditioned Modeled Losses for 2040

Wildfire	<u>Reference</u>	(1) <u>Direct and Assumed</u>	(2) <u>Net</u>	3+ <u>Ceded Amounts Recoverable</u>
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

[Redacted]

(7) If it is internally developed by the company, provide a brief description of assumptions/adjustments made

[Redacted]

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor catastrophe model, or combination of models used to calculate the CAT Risk Charge.

~~† Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).~~

[Redacted] Denotes items that must be manually entered on the filing software.

**DISCLOSURE OF CLIMATE CONDITIONED CAT EXPOSURE FOR WILDFIRE PR027CII**  
**(For Informational Purposes Only)**

Climate Conditioned Modeled Losses for 2050

Wildfire	Reference	(1) Direct and Assumed	(2) Net	3 <sup>‡</sup> Ceded Amounts Recoverable
(1) Worst Year in 50	Company Records			
(2) Worst Year in 100	Company Records			
(3) Worst Year in 250	Company Records			
(4) Worst Year in 500	Company Records			
(5) Worst Year in 1000	Company Records			

View of climate risk used

(6) If a Climate Conditioned Catalog developed by a commercial CAT model vendor is used, provide name and version of the catalog

(7) If it is internally developed by the company, provide a brief description of assumptions/adjustments made

Lines (1)-(5): Modeled losses to be entered on these lines are to be calculated using the same commercial vendor catastrophe model, or combination of models used to calculate the CAT Risk Charge.

~~‡ Column (3) is modeled catastrophe losses that would be ceded under reinsurance contracts. This should be associated with the Net Modeled Losses shown in Column (2).~~

Denotes items that must be manually entered on the filing software.



April 8, 2024

Ms. Eva Yeung  
National Association of Insurance Commissioners  
1100 Walnut Street, Suite 1500  
Kansas City, MO 64106-2197

**Re: Proposal 2023-17-CR (Climate Scenario Analysis)**

Dear Ms. Yeung:

The American Property Casualty Insurance Association (APCIA)<sup>1</sup>, the National Association of Mutual Insurance Companies (NAMIC)<sup>2</sup>, and the Reinsurance Association of America (RAA)<sup>3</sup> (collectively, “the Associations”), appreciate the opportunity to comment on the exposed proposal to require property casualty insurers to perform scenario analysis of their hurricane and wildfire exposure through a catastrophe model’s “Climate Conditioned Catalog”.

The exposed proposal is subject to almost all of the flaws that we addressed in a joint January 18 comment letter to the Solvency Workstream of the Climate and Resiliency (EX) Task Force. That letter is attached to our comments here, and we will not reiterate them except to say that, based upon discussions with our members and two of the catastrophe modelers that offer climate conditioned catalogs, the data produced by the proposal will be of little or no benefit to regulators in assessing an insurer’s current or likely future financial condition, at great cost to the companies that would be required to use those catalogs.

The Associations propose a different approach, which is detailed in the attached draft RBC proposal form. Under our approach, as part of their annual RBC filing, companies would be required to use the catastrophe model they currently use to calculate the RCAT charge for hurricane and wildfire perils, using the following assumptions:

- A 50% increase in the frequency of major hurricanes (Category 3 and higher, and for wind only), and
- A 50% increase in all wildfire events.

<sup>1</sup> APCIA is the primary national trade association for home, auto, and business insurers. APCIA promotes and protects the viability of private competition for the benefit of consumers and insurers, with a legacy dating back 150 years. APCIA members include companies of all sizes, structures, and regions—protecting families, communities, and businesses in the U.S. and across the globe.

<sup>2</sup> NAMIC has more than 1,500-member companies representing 40 percent of the total U.S. property/casualty insurance market. NAMIC member companies serve more than 170 million policyholders and write more than \$323 billion in annual premiums. Our members’ direct written premiums account for 67 percent of homeowners’ insurance and 55 percent of automobile insurance. Through NAMIC advocacy programs it promotes public policy solutions that benefit NAMIC member companies and the policyholders they serve and fosters greater understanding and recognition of the unique alignment of interests between management and policyholders of mutual companies

<sup>3</sup> The RAA is a national trade association representing reinsurance companies doing business in the United States. RAA membership is diverse, including reinsurance underwriters and intermediaries licensed in the U.S. and those that conduct business on a cross-border basis. The RAA also has life reinsurance affiliates and insurance-linked securities (ILS) fund managers and market participants that are engaged in the assumption of property/casualty risks. The RAA represents its members before state, federal and international bodies.

Under our proposal, companies would report the same PMLs (probable maximum losses) that are required in the current RCAT instructions (1/50-year, 1/100-year, 1/250-year, and 1/500-year).

Regulators have expressed their concerns about being able to assess insurers' risk concentrations for hurricanes and wildfires, and NAIC staff have expressed their need for data that is comparable with the current RBC PMLs, and that is comparable across companies. Our proposal accomplishes the goals that the exposure is seeking to meet but in a manner that is significantly less resource-intensive for companies. Our proposal also provides the following benefits:

- Major hurricanes cause 80%+ of historical economic losses (likely a greater percentage of insured losses), and scientific evidence for their increase is the strongest, making a targeted frequency adjustment scientifically valid that prioritizes their impact.
- Similarly, wildfires have seen an accelerating increase due to changes in temperature driving increased evaporation, making a large single scenario plausible and capturing the direction of risk changes.
- Explicitly selecting a tail scenario that causes portfolios to break, and examining how that happens, provides insight into potential financial impacts on insurers and is most protective of solvency – small percentage changes may just lead to dismissal of risk.
- A single, defined scenario maximizes comparability and aggregation across insurers.
- A single flat frequency change is highly accessible for small insurers and can also be rapidly implemented by vendor models.
- This approach excludes water impacts of hurricanes given the limitations of available tools to model impact and for the purpose simplifying assumptions for smaller insurers. However, hurricane water risk is less likely to be a solvency risk than wind, given that such risk is excluded from most policies and is instead covered by the National Flood Insurance Program.

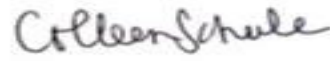
We also suggest that, after two or three years, the Subgroup assess the data this proposal produces and determine whether modifications are necessary or whether such data provides useful insight into the potential solvency impacts from climate scenarios. This reevaluation should be included in the RBC instructions to ensure that the regulators' goals are enshrined so that the benefits to regulators and insurers can be measured and adjusted as necessary.

The Associations look forward to discussing our proposal with the Subgroup. Please do not hesitate to contact us if you have any questions or would like more information.

Sincerely,



Stephen W. Broadie  
Vice President, Financial & Counsel  
American Property Casualty Insurance Association



Colleen W. Scheele  
Public Policy Counsel and Director of Financial and  
Tax Policy  
National Association of Mutual Insurance  
Companies



Dennis C. Burke  
Vice President, State Relations  
Reinsurance Association of America



January 18, 2024

Mr. Dan Daveline  
Director, Financial Regulatory Services  
National Association of Insurance Commissioners 1100 Walnut Street, Suite 1500  
Kansas City, MO 64106-2197

**Re: December 4, 2023, Memo from Solvency Workstream of Climate and Resiliency (EX) Task Force to Catastrophe Risk (E) Subgroup of the Property Casualty Risk-Based Capital (E) Working Group**

Dear Mr. Daveline:

The American Property Casualty Insurance Association (APCIA)<sup>1</sup>, the National Association of Mutual Insurance Companies (NAMIC)<sup>2</sup>, and the Reinsurance Association of America (RAA)<sup>3</sup> (collectively, “the Associations”) appreciate the opportunity to comment on the Solvency Workstream’s proposal to require property casualty insurers to perform scenario analysis of their hurricane and wildfire exposure through a catastrophe model’s “Climate Conditioned Catalog”. We also appreciate the extended time to respond granted by the Workstream.

The proposal, contained in a December 14, 2023, referral memo to the Catastrophe Risk (E) Subgroup, would require a property casualty insurer to use a catastrophe model’s Climate Conditioned Catalog to perform climate risk scenario analysis through timeframes extending to 2040 or 2050, and report the results in its annual confidential RBC filing. These results would be compared with the company’s current RCAT filing. This is intended to provide regulators the ability to estimate the impact of climate change and “hold conversations with the company’s management to the extent the state believed such information suggested the risk levels could become problematic for the insurer in the future.”

<sup>1</sup> APCIA is the primary national trade association for home, auto, and business insurers. APCIA promotes and protects the viability of private competition for the benefit of consumers and insurers, with a legacy dating back 150 years. APCIA members include companies of all sizes, structures, and regions—protecting families, communities, and businesses in the U.S. and across the globe.

<sup>2</sup> NAMIC has more than 1,500-member companies representing 40 percent of the total U.S. property/casualty insurance market. NAMIC member companies serve more than 170 million policyholders and write more than \$323 billion in annual premiums. Our members’ direct written premiums account for 67 percent of homeowners’ insurance and 55 percent of automobile insurance. Through NAMIC advocacy programs it promotes public policy solutions that benefit NAMIC member companies and the policyholders they serve and fosters greater understanding and recognition of the unique alignment of interests between management and policyholders of mutual companies

<sup>3</sup> The RAA is a national trade association representing reinsurance companies doing business in the United States. RAA membership is diverse, including reinsurance underwriters and intermediaries licensed in the U.S. and those that conduct business on a cross-border basis. The RAA also has life reinsurance affiliates and insurance-linked securities (ILS) fund managers and market participants that are engaged in the assumption of property/casualty risks. The RAA represents its members before state, federal and international bodies.



We appreciate that the Workstream has performed considerable research and proceeded in an appropriately deliberate manner to consider the issues surrounding climate scenario analysis for the insurance industry. Before a proposal such as this moves forward, however, the Associations believe that several important considerations must first be resolved, and therefore that the proposal is not ready for adoption in the 2024 RBC blank:


- Complexity – Performing the analysis proposed here is not a simple matter. A company would have to choose a Representative Concentration Pathways (RCP) Emission Scenario that it believes is appropriate. Use of multiple scenarios would be quite costly (as discussed below) and staff intensive.
- Migration, Construction Costs & Standards – Factors with greater impact on catastrophe risk than climate change over time include the continued migration of Americans to areas of higher catastrophe risk. According to industry experts, construction cost inflation will also have a significantly higher impact than climate change over time. Conversely, improvements in building code standards such as those led by the Insurance Institute for Building & Home Safety may offset increased risks. All of these aspects must be considered in evaluating future catastrophe risk potential.
- Limited Benefit – It is unclear what benefit company managements or regulators would derive from the comparison of catalog projections 20-30 years into the future with the current data sets used to calculate RCAT. The underlying insurance contracts that assume weather and climate risk are underwritten annually, and these projections would not take into account the changes to pricing, terms, and conditions that occur as the policies are written/renewed or the actions taken by insurers in response to changing weather patterns over time, e.g., managing exposures to avoid concentrations of risk in areas historically more prone to storms.
- Cost – It is our understanding that the catastrophe modeling companies charge separately for use of their climate catalogs, and the cost is extensive in terms of monetary expenditure, IT infrastructure, and staff resources. The significant costs associated with this proposal could be especially problematic for smaller insurers. The cost becomes even more concerning in light of the limited benefit of comparing catalog projections 20-30 years into the future with the current data sets used to calculate RCAT as discussed above. Ultimately, all these costs must be passed along to the consumer.
- Lack of Clarity – It is unclear what regulators would consider to be a “problematic” risk level, or how that would be determined. The “regulatory outcomes” from discussions with management are also unspecified. The focus of any such discussion should include how to ensure the viability of the insurance market in the future and not just to highlight pockets of risk concentration, which might have unintended consequences.
- Aggregation – The memo also states that this information would be used on an aggregate basis to develop a public report on the estimated impact of climate change on the insurance industry. Attempting to aggregate the cat model return period loss results across multiple companies will not provide reliable or useful information. For example, a 1-in-100-year hurricane loss for one company cannot simply be added to a 1-in-100-year hurricane loss for another company. Instead, the aggregation must be done using more granular event simulation details to produce an accurate 1-in-100-year combined company loss estimate.
- Lack of Flexibility -- The proposal only looks at hazard changes on a constant exposure base and makes no allowances for any future changes in exposure or vulnerability.
- Third-Party Model Issues – If the proposal is to move forward, companies should not be limited to the use of third-party models if they have their own models subject to appropriate verification (such as the current “own model” guidance for use in calculating RCAT).

The Associations would be happy to discuss these concerns with the Workstream and the Subgroup. However, we do not believe this proposal is ready to move ahead in the expedited timeframe that the memo seems to contemplate (i.e., adoption for the 2024 RBC blank).

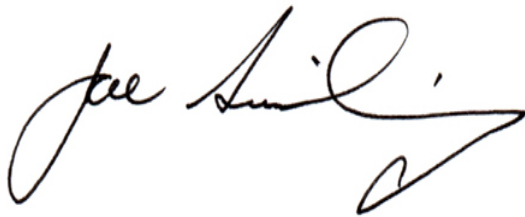
Sincerely,



Stephen W. Broadie  
Vice President, Financial & Counsel  
American Property Casualty Insurance Association



Colleen W. Scheele  
Public Policy Counsel and Director of Financial and  
Tax Policy  
National Association of Mutual Insurance  
Companies



Joseph Sieverling  
Senior Vice President and Director of Financial  
Services  
Reinsurance Association of America

**From:** Tina Shaw <[tina3shaw@gmail.com](mailto:tina3shaw@gmail.com)>  
**Sent:** Friday, April 5, 2024 7:33 PM  
**To:** Chou, Wanchin <[Wanchin.Chou@ct.gov](mailto:Wanchin.Chou@ct.gov)>  
**Cc:** Ronald Wilkins <[Ronald.Wilkins@partnerre.com](mailto:Ronald.Wilkins@partnerre.com)>  
**Subject:** NAIC Climate Scenario Proposal - Comments

You don't often get email from [tina3shaw@gmail.com](mailto:tina3shaw@gmail.com). [Learn why this is important](#)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Wanchin: Ron and I, as practicing actuaries, are submitting the following comments for your consideration.

The current proposal encourages insurers to take the first step in their scenario analysis journey. Extrapolating from global temperature rising above 1.5 or 2.0 Celsius based on where we are today, the PMLs in 2040 and 2050 for hurricanes and wildfires are expected to be a few orders of magnitude higher than the current state. The question is then what do the insurers do with the information. Insurers will likely dismiss the results and argue that they would do course correction along the way, either reducing exposures, increasing rates, reunderwriting or buying more reinsurance (if it's available). The current design does allow insurers to gain an understanding of whether their current reinsurance program will protect them today. Again, there is a moving target when reinsurers will also likely to take action to reduce their exposure and raise rates.

Depending on what questions the NAIC wants to address, the scenario can be designed differently.

1. Similar to the design of the current ORSA, from the insurers' perspective, what do they consider to be their highest risk in 2040 and 2050 from models? To address this question, the current proposal needs to pull additional information from the insurers:

- What region is most impacted? For Hurricane, is it Gulf States (with and without FL) , Southeast, or mid-Atlantic states? For wildfire, is it California, Pacific Northwest, South West, etc?
- What catalog of events is the insurer using from which modeling software? (OEP v. AEP)?
- What would mitigation or management actions look like (e.g. non-renewals, rates, underwriting, reinsurance?)

2. Similar to approaches taken by other regulatory authorities such as the UK, the regulators could design the climate scenarios from the regulators' perspective. In other words, if there are some preconceived notions of where and what the hazards are in 2040 and 2050, the regulators work with the vendors to come up with a few scenarios for the insurers to work

with. This variation uses a push method instead of a pull from the insurers, similar to the PRA's 2019 stress test (see link below). For example, regulators could select a few catalog of events from the vendor's models and ask insurers to provide the EP curve using their in-force exposures. For this option, I would also recommend asking for mitigation or management actions as well.

<https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2019/general-insurance-stress-test-2019-scenario-specification-guidelines-and-instructions-draft.pdf>

Additionally, based on the approach of Scenario 2, the regulators could explore public policy issues such as what regions would lose access to insurance. As in the Bank of England's Climate Biennial Exploratory Scenario (CBES), in the NGFS's scenario of no additional action (NAA), one of the conclusions reached was that 7% of the households in an concentrated area would be forced to go without insurance as properties become uninsurable.

We would be happy to discuss these comments further and thank you for the opportunity to provide our views.

Sincerely,

Tina Shaw and Ron Wilkins