

NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Date: 2/10/22

Virtual Meeting **CATASTROPHE RISK (E) SUBGROUP** Tuesday, February 22, 2022 1:00 – 2:00 p.m. ET / 12:00 – 1:00 p.m. CT / 11:00 a.m. – 12:00 p.m. MT / 10:00 – 11:00 a.m. PT

ROLL CALL

Wanchin Chou, Co-Chair	Connecticut	Halina Smosna, Co-Chair	New York
Robert Ridenour, Vice Chair	Florida	Tom Botsko	Ohio
Laura Clements	California	Andrew Schallhorn	Oklahoma
Judy Mottar	Illinois	Will Davis	South Carolina
Gordon Hay	Nebraska	Miriam Fisk	Texas
Anna Krylova	New Mexico		

NAIC Support Staff: Eva Yeung

AGENDA

1.	Consider Adoption of Proposal 2021-17-CR (Adding Wildfire Peril for Informational Purposes Only)— <i>Wanchin Chou (CT)</i>	Attachment A
2.	Discuss the Independent Model Review Instruction in Rcat—Wanchin Chou (CT)	Attachment B
3.	Discuss the Issue of Double Counting in the R5 Component—Halina Smosna (NY)	
4.	Hear Presentation regarding Flood Private Market—Nancy Watkins (Milliman)	Attachment C
5.	Discuss Any Other Matters Brought Before the Subgroup—Wanchin Chou (CT)	

6. Adjournment

Capital Adequacy (E) Task Force **<u>RBC Proposal Form</u>**

[] Capital Adequacy (E) Task Force	[] Health RBC (E) Working Group	[] Life RBC (I
[] Catastrophe Risk (E) Subgroup	[] Investment RBC (E) Working Group	[] Operational

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] C3 Phase II/ AG43 (E/A) Subgroup

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-] P/C RBC (E) Working Group
- E) Working Group
- Risk (E) Subgroup

Γ

] Longevity Risk (A/E) Subgroup

	DATE: <u>12/16/21</u>	FOR NAIC USE ONLY
CONTACT PERSON:	Eva Yeung	Agenda Item # <u>2021-17-CR</u>
TELEPHONE:	816-783-8407	Year <u>2022</u>
EMAIL ADDRESS:	eyeung@naic.org	DISPOSITION
ON BEHALF OF:	Catastrophe Risk (E) Subgroup	[] ADOPTED
NAME:	Wanchin Chou	[] REJECTED
TITLE:	Chair	[] DEFERRED TO
AFFILIATION:	Connecticut Department of Insurance	[] REFERRED TO OTHER NAIC GROUP
ADDRESS:	153 Market Street, 7 th Floor	[x] EXPOSED <u>12/16/22</u>
	Hartford, CT 06103	[] OTHER (SPECIFY)

IDENTIFICATION OF SOURCE AND FORM(S)/INSTRUCTIONS TO BE CHANGED

] Health RBC Blanks

] Health RBC Instructions

- [x] Property/Casualty RBC Blanks
- [] Life and Fraternal RBC Instructions [x] Property/Casualty RBC Instructions [] Life and Fraternal RBC Blanks
-] OTHER

DESCRIPTION OF CHANGE(S)

The proposed change may add wildfire as one of the catastrophe risk perils for informational purposes only in the Rcat component.

REASON OR JUSTIFICATION FOR CHANGE **

While the Catastrophe Risk (E) Subgroup reviewed the possibility of expanding the current catastrophe framework to include other perils that may experience a greater tail risk under projected climate-related trends, the wildfire has been identified as one of the major drivers of the U.S. insured losses. The Subgroup decided to consider adding wildfire as one of the catastrophe perils in the Rcat component.

Additional Staff Comments:

12/16/21 – The Catastrophe Risk (E) Subgroup exposed the proposal for a 60-day comment period ending by 02-13-22.

** This section must be completed on all forms. Revised 2-2019

CALCULATION OF CATASTROPHE RISK CHARGE RCAT <u>PR027A, PR027B, PR027C, PR027, AND PR027INT</u>

The catastrophe risk charge for earthquake (PR027A), and hurricane (PR027B), and wildfire for Informational purposes only (PR027C) risks is calculated by multiplying the RBC factors by the corresponding modeled losses and reinsurance recoverables. The risk applies on a net basis with a corresponding contingent credit risk charge for certain categories of reinsurers. Data must be provided for the worst year in 50, 100, 250, and 500; however, only the worst year in 100 will be used in the calculation of the catastrophe risk charge. While projected losses modeled on an Aggregate Exceedance Probability basis is preferred, companies are permitted to report on an Occurrence Exceedance Probability basis if that is consistent with the company's internal risk management process.

The projected losses can be modeled using 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, as well as catastrophe models that are internally developed by the insurer or that are the result of adjustments made by the insurer to vendor models to represent the own view of catastrophe risk (hereinafter "own models").

However, an insurer seeking to use an own model must first obtain written permission to do so by the domestic or lead state insurance regulator. In the situation where the model output is used to determine the catastrophe risk capital requirement for a single entity, the regulator granting permission to use the own model is the domestic state. In the situation where the model output is used to determine the catastrophe risk capital requirement for a group, the grantor is the lead state regulator. In the situation where the insurer seeking permission is a non-U.S. insurer, the grantor shall be the lead state regulator. Under all scenarios, the regulator that is granting permission should inform other domestic states that have a catastrophe risk exposure and share the results of the review.

To obtain permission to use the own model, the insurer must provide the domestic or lead state insurance regulator with written evidence of each of the following:

- 1. The use of the own model is reasonable considering the nature, scale, and complexity of the insurer's catastrophe risk;
- 2. The own model is used for catastrophe risk management, capital assessment, and the capital allocation process and the model has been used for at least the last 3 years;
- 3. The perils included in the RBC Catastrophe Risk Charge have been validated by the insurer and that these perils include both US and global exposures, where applicable;
- 4. The own model has been developed using reasonable data and assumptions and that model results used in determining the RBC Catastrophe Risk Charge reflect exposure data that is no older than six months;
- 5. The insurer has individuals with experience in developing, testing and validating internal models or engages third parties with such experience. The insurer must provide supporting model documentation and a copy of the latest validation report and the insurer is solely responsible for the relevant cost. For each peril included in the RBC Catastrophe Risk Charge, the validation report should attest that the projected losses are a reasonable quantification of the exposure of the reporting entity. The validation report must provide a description of the scope, content, results and limitations of the validation, the individual qualifications of validation team and the date of the validation. Both the model documentation and the model validation report must be provided at a minimum once every five years, or whenever the lead or domestic state calls an examination; whenever there is a material change in the model; or whenever there is a material change in the insurer's exposure to catastrophe exposure.
- 6. The results of the own model should be compared with the results produced by at least one of the following models: AIR, Corelogic, RMS, KCC, ARA HurLoss, or the Florida Public Model. The insurer must provide the comparison and an explanation of the drivers of differences between the results produced by the internal model vs. results produced by the selected prescribed model.
- 7. If the own model has been approved or accepted by the non-U.S. group-wide supervisor for use in the determination of regulatory capital, the insurer must submit evidence, if available, from the non-US group-wide supervisor of the most recent approval/acceptance including the description of scope, content, results and limitations of the approval/acceptance process and dates of any planned future approval/acceptance, if known. The name and the contact information of a contact person at the non-US group-wide supervisor should also be provided for questions on the approval/acceptance process.

If the lead or domestic state determines that permission to use the own model cannot be granted, the insurer shall be required to determine the RBC Catastrophe Risk Charge through the use of one of the third-party commercial vendor models (AIR, Corelogic, RMS, KCC, ARA HurLoss (hurricane only)), or the Florida Public Model for hurricane, as advised by the lead state or domestic state.

If the lead or domestic state determines that permission to use the own model can be granted to determine the RBC Catastrophe Risk Charge, the model will be subject to additional review through the ongoing examination process. If, as a result of the examination, the lead or domestic state determines that permission to use the own model should be revoked, the insurer may be required to resubmit the risk-based capital filing and any past filings so impacted where own model was used, as directed by the lead state or domestic state. If the insurer obtains permission to use the own model, it cannot revert back to using third party commercial vendor models to determine the RBC Catastrophe Risk Charge in subsequent reporting periods, unless this is agreed with the lead or domestic state that granted permission.

The contingent credit risk charge should be calculated in a manner consistent with the way the company internally evaluates and manages its modeled net catastrophe risk.

Note that no tax effect offsets or reinstatement premiums should be included in the modeled losses. Further note that the catastrophe risk charge is for earthquake and hurricane risks only.

As per the footnote on this page, modeled losses to be entered PR027A₁ and PR027B and PR27C in Lines (1) through (4) are to be calculated using one of the third party commercial vendor models – AIR, Corelogic, RMS, KCC, ARA HurLoss (hurricane only); or the Florida Public Model (hurricane only)or the insurer's own catastrophe model; and using the insurance company's own insured property exposure information as inputs to the model. The insurance company may elect to use the modeled results from any one of the models, or any combination of 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 exposure data, modeling, and assumptions that the insurer uses in its own internal catastrophe risk management process. Any exceptions must be explained in the required *Attestation Re: Catastrophe Modeling Used in RBC Catastrophe Risk Charges* within this RBC Report.

The Grand Total (PR027) page includes an iInterrogatory on page (PR027INT) to supports an exemption from filing the catastrophe risk charge.

Any company qualifying for exemption from the earthquake risk charge must identify the particular criteria from among (1a), (1b), (2) and (3) that provides its qualification for exemption and may leave the other three items from this group of four possible qualifications for exemption blank; except identification of criteria (3) as the basis for the exemption requires a further answer to (3a) and (3b). If an insurer does not write or assume earthquake risks leaving no gross exposure, enter an "X" in <u>PR027INT</u> interrogatory 3, with no need to fill in (3a) and (3b). If the company qualifies for exemption from the earthquake risk charge, page PR027A and line (1) on this page<u>PR027</u> may be left blank.

Any company qualifying for exemption from the hurricane risk charge must identify the particular criteria from among (4a), (4b), (5) and (6) that provides its qualification for exemption and may leave the other three items from this second group of four possible qualifications for exemption blank. If an insurer does not write or assume hurricane risks leaving no gross exposure, enter an "X" in <u>PR027INT</u> interrogatory 6. If the company qualifies for exemption from the hurricane risk charge, page PR027B and line (2) on this page<u>PR027</u> may be left blank.

Any company qualifying for exemption from the wildfire risk charge must identify the particular criteria from among (7a), (7b), (8) and (9) that provides its qualification for exemption and may leave the other three items from this third group of four possible qualifications for exemption blank. If an insurer does not write or assume **wildfire** risks leaving no gross exposure, enter an "X" in PR027INT interrogatory 9. If the company qualifies for exemption from the wildfire risk charge, page PR027C and line (3) on PR027 may be left blank.

In general, the following conditions will qualify a company for exemption: if it uses an intercompany pooling arrangement or quota share arrangement with U.S. affiliates covering 100% of its earthquake, and hurricane and wildfire risks such that there is no exposure for these risks; if it has a ratio of Insured Value – Property to surplus as regards policyholders of less than 50%; or if it writes Insured Value – Property that includes hurricane and/or earthquake and/or wildfire coverage in catastrophe-prone areas representing less than 10% of its surplus as regards policyholders.

"Insured Value – Property" includes aggregate policy limits for structures and contents for policies written and assumed in the following annual statement lines – Fire, Allied Lines, Earthquake, Farmowners, Homeowners, and Commercial Multi-Peril.

Attachment A

"Catastrophe-Prone Areas in the U.S." include:

- i. For hurricane risks, Hawaii, District of Columbia and states and commonwealths bordering on the Atlantic Ocean and/or the Gulf of Mexico including Puerto Rico.
- ii. For earthquake risk or for fire following earthquake, any of the following commonwealth or states: Alaska, Hawaii, Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Puerto Rico, and geographic areas in the following states that are in the New Madrid Seismic Zone Missouri, Arkansas, Mississippi, Tennessee, Illinois and Kentucky.
- iii. For wildfire risk, California, Idaho, Montana, Oregon, Nevada, Wyoming, Colorado, New Mexico, Washington, Arizona, and Utah.

Specific Instructions for Application of the Formula

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.

Column (4) - Ceded Amounts with Zero Credit Risk Charge

Per the footnote, 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).

Column (6) – Amount

These are automatically calculated based on the previous columns.

Column (7) - RBC Requirement

A factor of 1.000 is applied to the reported modeled catastrophe losses calculated on both AEP and OEP basis, and a factor of 0.018 is applied to the reinsurance recoverables. The RBC Requirement is based on either AEP reported results <u>or</u> OEP reported results (not both), consistent with the way the company internally evaluates and manages its modeled net catastrophe risk.

<u>Column (5) – Y/N</u> Please indicate "X" for OEP basis and "N" for AEP basis. This column

Please indicate "Y" for OEP basis and "N" for AEP basis. This column should not be blank.

ATTESTATION RE: CATASTROPHE MODELING USED IN RBC CATASTROPHE RISK CHARGES PR002

(1)	Company Name hereby certifies that the modeled catastrophe losses for earthquake risk, hurricane risk, and wildfire risk entered on lines 1 through 4 of Sc applying the same catastrophe models or combination of models to the same underlying exposure data, and using the same modeling assumptions, as the company uses in its own internal risk management
(1a)	
	These exceptions, if any, are made for the following reasons:
(1b)	
	The following describes the company's application of catastrophe modeling to the determination of the Reat risk charges: (Include which models are used in what combinations for each of the Reat charg not limited to time dependency, secondary uncertainty, storm surge, demand surge, and fire following earthquake; and the rationale for treatment of each issue or item): (provide attachments if necessary
(2)	
	The company further certifies that the underlying exposure data used in the catastrophe modeling process is accurate and complete to the best of our knowledge and ability, with the following limitations
(3)	
	The following describes the extent to which the exposure location data is accurate to GPS coordinates; to zip code; and to a level less accurate than zip code: (provide attachments if necessary):
(4)	
	The following describes the steps taken to validate, to the best of the Company's knowledge and belief, the accuracy and completeness of the exposure data used in the modeling process to determine the necessary):
(5)	
	Provide an explanation of the methodology used to derive the amounts in columns 3 and 4 of page PR027A, PR027B and PR027C.
(6)	
	(7) Completed on behalf of: (7) Completed By: Last First
	(7) Email: (7) Phone: Date:

chedule PR027 of this Risk-Based Capital Report were nt process, with the following exceptions:

ges; what key modeling assumptions are used, including but *i*):

Rcat catastrophe risk charges (provide attachments if

Middle

Title

CALCULATION OF CATASTROPHE RISK CHARGE FOR WILDFIRE PR027C FOR INFORMATIONAL PURPOSES ONLY



Lines (1)-(4): 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.

CALCULATION OF CATASTROPHE RISK CHARGE PR027

		Reference	RBC Amount
(1) Total	Earthquake Catastrophe Risk	PR027A L(10) C(7)	0
(2) Total	Hurricane Catastrophe Risk	PR027B L(10) C(7)	0
(3) Total	Wildfire Catastrophe Risk	PR027C L(10)C(7)	0
(4) Total	Catastrophe Risk (Rcat)	$SQRT(L(1)^{2} + L(2)^{2})$	0
(4a) Total	Catastrophe Risk (Rcat For Informational Purposes Only)	SQRT(L(1)^2 + L(2)^2 + L(3)^2)	0

Lines 3 and 4a are for informational purposes only

(1) PBC Amount Attachment A

INTERROGATORY TO SUPPORT EXEMPTION FROM COMPLETING PR027 (To be completed by companies reporting no RBC charge in either Lines 1 through 3) PR027INT

A Earthquake Exemption (To be completed by companies reporting no RBC charge in PR027 Line 1) -

(1) The company has not entered into a reinsurance agreement covering earthquake exposure with a non-affiliate or a non-US affiliate and, either

- (1a) the company participates in an inter-company pooling arrangement with 0% participation, leaving no net exposure for earthquake risks; Or
- (1b) the company cedes 100% of its earthquake exposures to its US affiliate(s), leaving no net exposure for earthquake risks
- (2) The Company's Ratio of Insured Value Property to surplus as regards policyholders is less than 50%

(3) The company has written Insured Value - Property that includes earthquake coverage in the Earthquake-Prone areas representing less than 10% of its surplus as regards policyholders

For any company qualifying for the exemption under 3 provide details about how the "geographic areas in the New Madrid Seismic Zone" were determined. (3a) What resource was used to define the New Madrid Seismic Zone?

(3b) Was exposure determined based on zip codes or counties in the zone, was it based on all of the earthquake exposure in the identified states or was another methodology used? Describe any other methodology used.

Note: "Earthquake-Prone areas" include any of the following states or commonwealths: Alaska, Hawaii, Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Puerto Rico, and geographic areas in the following states that are in the New Madrid Seismic Zone - Missouri, Arkansas, Mississippi, Tennessee, Illinois and Kentucky.

B Hurricane Exemption (To be completed by companies reporting no RBC charge in PR027 Line 2) -

- (4) The company has not entered into a reinsurance agreement covering hurricane exposure with a non-affiliate or a non-US affiliate and, either
- (4a) the company participates in an inter-company pooling arrangement with 0% participation, leaving no net exposure for hurricane risks; Or
- (4b) the company cedes 100% of its hurricane exposures to its US affiliate(s), leaving no net exposure for hurricane risks
- (5) The Company's Ratio of Insured Value Property to surplus as regards policyholders is less than 50%
- (6) The company has written Insured Value Property that includes hurricane coverage in the Hurricane-Prone areas representing less than 10% of its surplus as regards policyholders

Note: "Hurricane-Prone areas" include Hawaii, District of Columbia and states and commonwealths bordering on the Atlantic Ocean, and/or Gulf of Mexico including Puerto Rico.

C Wildfire Exemption (To be completed by companies reporting no RBC charge in PR027 Line 3) -

- (7) The company has not entered into a reinsurance agreement covering wildfire exposure with a non-affiliate or a non-US affiliate and, either
- (7a) the company participates in an inter-company pooling arrangement with 0% participation, leaving no net exposure for wildfire risks; Or
- (7b) the company cedes 100% of its wildfire exposures to its US affiliate(s), leaving no net exposure for wildfire risks
- (8) The Company's Ratio of Insured Value Property to surplus as regards policyholders is less than 50%

(9) The company has written Insured Value - Property that includes wildfire coverage in the wildfire-Prone areas representing less than 10% of its surplus as regards policyholders

Note: "Wildfire-Prone areas" include any of the following states: California, Idaho, Montana, Oregon, Nevada, Wyoming, Colorado, New Mexico, Washington, Arizona, and Utah.

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

* Item C is for informational purposes only.

Place an "X" in the appropriate cell for the criteria under which the company is claiming an exemption

Calculation of Total Risk-Based Capital After Covariance PR032 R4-Rcat

			(1)
R4 - Uno	lerwriting Risk - Reserves	PRBC O&I Reference	RBC Amount
(56)	One half of Reinsurance RBC	If R4 L(57)>(R3 L(51) + R3 L(52)), R3 L(52), otherwise, 0	
(57)	Total Adjusted Unpaid Loss/Expense Reserve RBC	PR017 L(15)C(20)	
(58)	Excessive Premium Growth - Loss/Expense Reserve	PR016 L(13) C(8)	
(59)	A&H Claims Reserves Adjusted for LCF	PR024 L(5) C(2) + PR023 L(6) C(4)	
(60)	Total R4	L(56)+L(57)+L(58)+L(59)	
R5 - Uno	lerwriting Risk - Net Written Premium		
(61)	Total Adjusted NWP RBC	PR018 L(15)C(20)	
(62)	Excessive Premium Growth - Written Premiums Charge	PR016 L(14)C(8)	
(63)	Total Net Health Premium RBC	PR022 L(21)C(2)	
(64)	Health Stabilization Reserves	PR025 L(8)C(2) + PR023 L(3) C(2)	
(65)	Total R5	L(61)+L(62)+L(63)+L(64)	
Rcat - C	atastrophe Risk		
(66)	Total Reat	PR027 L(4) C(1)	
(67)	Total RBC After Covariance Before Basic Operational Risk = R0+SQRT(I	R1^2+R2^2+R3^2+R4^2+R5^2+Rcat^2)	
(68)	Basic Operational Risk = $0.030 \times L(67)$		
(69)	C-4a of U.S. Life Insurance Subsidiaries (from Company records)		
(70)) Net Basic Operational Risk = Line (68) - Line (69) (Not less than zero)		
(71)	Total RBC After Covariance including Basic Operational Risk = $L(67)$ + L	(70)	
(72)	Authorized Control Level RBC including Basic Operational Risk = $5 \times 10^{\circ}$	71)	

Image: constraint of the constraint	(28III) Total Losses and
Image: constraint of the constraint	(28III) Total Losses and
(3) (24) (28) (24) (28) (24B) (28B) (28C) (24I) (28I) (24I)	(28III) Total Losses and
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Image: Losses and Premiums Losses and Expenses Losses	
Areal and bar a	Expenses Incurred,
Image: constraint of the state of the s	Net excluding Farthquake
Earned, NetUnpaidIncurred, NetUnpaidIncurred, NetLosses UnpaidIncurred, NetLosses UnpaidIncurred, Net(2) 201300000000	Hurricane and
(2) 2013 0 0 0 0	Wildfire Losses
	0
(3) 2014 0 0	0
(4) 2015 0 0	0
(5) 2016 0 0	0
(6) 2017 0 0	0
(7) 2018 0 0	0
(8) 2019 0 0	0
(9) 2020 0 0	0
(10) 2021 0 0	0
(11) 2022 0 0 0	0
(12) Totals 0 0	



nanual data entry items

*Please provide losses only; no expenses. Catastrophe losses should 1.) be the net losses incurred for the reporting entity, not net losses incurred for the group; 2.) be a subset of, and therefore, less than, total net losses reported in Column (28); 3.) be reported in 000s to be consistent with all values reported in this exhibit; and 4.) not be reported as negative amounts.

** If this line of business has incurred U.S. catastrophe losses arising from events either included on the list of U.S. catastrophe events approved by the Catastrophe Risk Subgroup as available on the NAIC's website or numbered and labeled by PCS as a hurricane, tropical storm, or earthquake, provide only the amount of those catastrophe losses in Catastrophe Experience columns (24A) and (28A).

*** If this line of business has incurred non-U.S. catastrophe losses arising from a hurricane, tropical storm, or earthquake from an event included on the list of non-U.S. catastrophe events approved by the Catastrophe Risk Subgroup as available on the NAIC's website, provide only the amount of those catastrophe losses in Catastrophe Experience Columns (24B) and (28B).

****Columns 24I through 28III are for informational purposes only.



Eva Yeung Senior Property/Casualty RBC Analyst & Technical Lead National Association of Insurance Commissioners 1100 Walnut Street Suite 1500 Kansas City, MO 64106-2197 eyeung@naic.org Swiss Re America Holding Corporation 900 G Street, NW Suite 201 Washington, DC 20001

February 11, 2021

Re: NAIC Proposal 2021-17-CR - addition of wildfire peril to Rcat

Thank you for the opportunity to comment on the NAIC's proposed addition of wildfire as a catastrophic peril in the Rcat component of RBC.

Swiss Re has been involved from the beginning of the NAIC's review of expanding the current RBC catastrophe framework to include other perils that are increasing in frequency and severity as a result of climate-related trends. When wildfire was identified as the first of these perils to be examined, Swiss Re volunteered to participate in the Catastrophe Risk Technical Review Ad Hoc Group (Ad Hoc Group) that was constituted to consider the viability of wildfire models being used for RBC calculation purposes.

As the Catastrophe Risk Subgroup passes the wildfire RBC recommendation along for consideration to the Property & Casualty Risk-Based Capital Working Group and the Capital Adequacy Task Force, we believe it is important to note what the work of the Ad Hoc Group did and did not do. The process undertaken by the Ad Hoc Group provided opportunities to hear vendor presentations about new wildfire models and ask questions, but the process did not validate or evidence how the various vendor wildfire models are suitable to implement an appropriate catastrophe capital charge. The report of the Ad Hoc group references the Actuarial Standards Board, Actuarial Standard of Practice No. 38 regarding catastrophe modelling. The Ad Hoc Group's reference(s) to the standard should be viewed as providing information and guidance rather than a statement that a significant actuarial analysis was performed. To the best of our knowledge, a sensitivity study and output analysis were not provided to industry members of the Ad Hoc Group, and it is unclear how detailed of an impact study was presented to regulator members of the Ad Hoc Group.

Another critical element the NAIC should consider is the timing of requiring RBC capital calculations to be based on model output. Wildfire models are in their infancy and the science behind them continues to evolve. During this period of evolution and refinement, model results

🗊 Swiss Re

are likely to change markedly from year to year. Because these models are new, insurers and brokers may not have sufficient experience with the various vendor models to understand their differences, which is integral in determining which model best aligns with a company's view of risk. Additionally, we believe it will take time for companies to fully integrate new wildfire models across their costing, risk selection, and capital management processes. These considerations involve additional complexities for reinsurers as they look across multiple clients and portfolios.

Because of the complexity, uncertainty, and potential inconsistency in using modelled results, we believe the NAIC should extend the "informational purposes only period" to 3 years, at least. An extended "informational purposes only" period would allow companies the time to responsibly incorporate either a vendor or internal model fully into pricing, risk selection and capital management processes. Additionally, the NAIC will benefit from having multiple years of data to compare. In the interim, the NAIC could also collect data from companies about their current methods of incorporating wildfire risk into other RBC components, such as "all other perils." This additional review would inform the NAIC about whether any such methods offer a better alignment of wildfire risk to capital and demonstrate how best to incorporate wildfire risk into the RBC calculation. Further, comparing model calculated wildfire risk capital charges with existing wildfire risk capital considerations will provide a head start on how wildfire risk should be removed from other RBC components in order to avoid double counting if a new Rcat factor is added. Identifying how companies treat the consideration of secondary perils generally will be beneficial to the NAIC as regulators deliberate flood and severe convective storm risks.

We appreciate the NAIC's thoughtful consideration of an RBC component for wildfire risk. If it is determined that modelled losses are the best method for including an RBC component, sufficient time will be necessary for regulators, modellers, and companies to correctly incorporate wildfire risk models into their existing processes, methodologies and capital management philosophies.

Swiss Re looks forward to the continuing our participation in the NAIC's deliberations on this and other secondary perils. If you have any questions, please contact either Angela or me.

Yours sincerely,

Matthe ?. with

Matthew Wulf Head State Regulatory Affairs Americas Swiss Re

Angela Gleason

Angela Gleason Head P&C Regulation



February 13, 2022

Wanchin Chou and Halina Smosna, Co-Chairs Catastrophe Risk (E) Subgroup National Association of Insurance Commissioners

Re: Adding Wildfire to Rcat for Informational Purposes (2021-17-CR)

Dear Co-Chairs Chou and Smosna:

The American Property Casualty Insurance Association (APCIA)¹ welcomes the opportunity to comment on the Catastrophe Risk (E) Subgroup's proposal to add wildfire as one of the catastrophe risk perils for informational purposes only in the Rcat component. APCIA has also appreciated the opportunity to participate in the Subgroup's examination of whether to implement the wildfire peril into RBC, including our participation on the ad hoc group that reviewed wildfire modeling for that purpose.

APCIA supports an extended, multi-year period of informational-only filings with wildfire added as a catastrophe risk peril. The wildfire peril should not be added to RBC beyond informationalonly filings until wildfire models are ready for purposes of imposing a capital requirement. Wildfire models are newer and remain premature compared to the modeling capabilities for hurricane and earthquake perils. Wildfire modeling also introduces new complexities since local conditions have a more significant impact on wildfire exposure in comparison to other perils. While wildfire models seem to work well in developing estimates of average annual losses for rating purposes, projections of 1/100 year exposures (for the Rcat charge) are far less robust. Given their relatively new stage of development and the added complexities, existing wildfire models are more prone to yielding inconsistent results, particularly for tail risk. It is critical for these concerns to be addressed before wildfire is incorporated into RBC for solvency purposes.

The proposal should clearly state that wildfire will not be added to Rcat for solvency purposes until the weaknesses of the current models have been addressed and no longer exist. Most importantly, the Subgroup must ensure that different models produce comparable results before wildfire is incorporated into RBC beyond informational-only reporting. We have appreciated the past statements of Subgroup members that wildfire will not be incorporated beyond informational-only reporting until concerns about the modeling are addressed, but this point should be made explicit in the proposal.

¹ 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 represent all sizes, structures, and regions—protecting families, communities, and businesses in the U.S. and across the globe.

We believe a multiple-year process for informational-only filings is necessary to ensure the wildfire peril is appropriately incorporated into RBC. This will allow wildfire models to continue to evolve and grow more sophisticated as modeling capabilities and the science underlying the modeling improves. A multi-year process for informational-only reporting will also provide more time to review model outputs. Although APCIA participated on the ad hoc technical group, results or an impact analysis of the modeling has not been shared with us, and it is unclear whether this information has been shared with regulators.

The development of wildfire modeling is in a fundamentally different place than the modeling for hurricane and earthquake when those perils were incorporated into Rcat. The NAIC did not add hurricane and earthquake to RBC until the modeling was ready for purposes of imposing a capital requirement, and the same approach should be taken here. An extended, multi-year period of informational-only filings is necessary to ensure modeling capabilities are ready before wildfire is added to Rcat for solvency purposes.

Thank you for considering the points addressed in this letter, and please do not hesitate to contact us if you have any questions.

Sincerely,

Stephen W. Broadie Vice President, Financial & Counsel

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Matthew Vece Director, Financial & Tax Counsel





February 13, 2022

Wanchin Chou and Halina Smosna Co-Chairs, Catastrophe Risk (E) Subgroup National Association of Insurance Commissioners 1100 Walnut Street, Suite 1500 Kansas City, MO 64106-2197

Attn: Eva Yeung, NAIC Via Email: <u>eyeung@naic.org</u>

Re: Joint Industry Comments - Adding Wildfire Peril to RCAT RBC (2021-17-CR)

Dear Co-Chairs Chou and Smosna:

On behalf of the National Association of Mutual Insurance Companies and the Reinsurance Association of America, we offer the following comments to the Catastrophe Risk (E) Subgroup regarding the proposed addition of wildfire as one of the catastrophe risk perils to be included in the RCAT component of the property and casualty risk-based capital formula. NAMIC and RAA members collectively represent the majority of property and casualty insurers and reinsurers doing business throughout the United States. Our members file risk-based capital reports with their lead state regulator and the NAIC; therefore, they have an interest in this proposal.

U.S. insurers have been responding to the increased wildfire risk associated with the rapid growth of the U.S. wildland-urban interface (WUI) in recent years. The U.S. Fire Administration defines the WUI as the zone "where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels."¹ This is where wildfires pose the greatest risk to people and their property. Insured losses from wildfires have increased rapidly in recent years and demand for better information and modeling is rising.² As populations and communities grow in the WUI area and insured losses from wildfires increase, catastrophe modelers have responded with new and updated products. NAMIC and RAA support insurers use of wildfire models; however, we have concerns that the current approach to add wildfire risk to the RBC formula has not been consistent with the methodical processes and procedures previously used to develop other catastrophe risk charges, namely for earthquake and hurricane risks.

Wildfire Models are Not Ready to be Relied Upon for Solvency Purposes

Given that various NAIC groups are currently exploring the topic and gathering information related to how insurers are measuring and modeling climate-related risks, such as wildfires, we urge the NAIC to take a strategic pause, to carefully consider how existing wildfire models are being used by insurers beyond capital purposes, and to implement a holistic approach to reviewing wildfire models. Further, we

¹ <u>https://www.usfa.fema.gov/wui/what-is-the-wui.html</u>

² <u>https://www.iii.org/table-archive/21420</u>

recognize wildfire is one of a longer list of modeled perils – which may also include flood, convective storms, terrorism, and cyber – to possibly be added to the catastrophe risk component (RCAT) of the formula; therefore, NAMIC and RAA believe it is important to establish a process that sets criterion for future use to review and approve other perils for the RCAT charge.

There has been a lot of thought and research around catastrophe modeling, and the RCAT wildfire proposal, while novel in some ways, has the benefit of being able to follow the more systematic approach used to develop the earlier RCAT charges for earthquake and hurricane risk. Additionally, the actuarial field has a well-established set of recommended practices that include using professional judgment to determine that a model is appropriate for the particular intended use as well as other protocols. While some models/purposes may be new/evolving, actuarial procedures for addressing them are not. Actuarial Standard of Practice No. 38 (ASOP 38) serves as a proven guide for necessary review processes before wildfire catastrophe models can be relied upon for solvency purposes.

Although the NAIC formed an ad-hoc technical group to explore vendor wildfire models that group did not have a full complement of subject matter experts to review/approve these models (and its stated purpose was not to approve models). To be clear, our understanding: no model outputs for projected wildfire losses were reviewed for reasonableness, and no comparison of different model run results was made to observe how closely converged (and consistent) the models are at this stage. **Given the significance of adding an explicit wildfire risk capital charge to the RBC formula, a complete ASOP 38 review should be required.** The current approach may appear expedited, but without a sufficient review process in place, it may push the analysis burden to state regulators, which may result in increased cost of regulation for regulators and insurers and inconsistent/unstable results.

What is the Harm in Getting RBC/RCAT Wrong?

Getting RCAT wrong could negatively impact the RBC formula for reliable use by regulators and property/casualty insurers. Regulators need tools that are solid and proven when considering questions of capital adequacy. By prematurely mandating particular models for specific not fully proven purposes – especially a solvency-related purpose – could lead to volatile RBC results from year-to-year. With new and changing models (including revised assumptions and risk factors) questions of instability would undermine the very purpose of the tool intended to measure insurers' riskiness. Consequently, RBC as a regulatory triggering mechanism would be weakened giving way to a lack of comparability and trend analysis.

Turning to the impact on insurers, getting RCAT wrong could mean additional capital requirements for insurers, this potentially leads to increased cost of insurance coverage for consumers and/or to decisions to exit markets altogether. The stakes are too high to use an untested expedited process and a relatively nascent tool for these RBC purposes. It is crucial to know more before moving forward, as there could be a significant learning curve associated with licensing the vendor models for companies with little to no experience, leading to high compliance costs, particularly for smaller-to-medium-sized insurers.

What Should the Subgroup do About the Wildfire RCAT Charge?

It is not a matter of *whether* wildfire should be addressed in this area, it is a matter of *how*. For this, one need only look to the process for the perils that are subject to RCAT today (which is outlined below): collect baseline-use information from insurers such as historical wildfire losses, consider appropriate education materials and guidance that would be most beneficial to insurance regulators, set-up reliable review processes and standards to approve models, update the Catastrophe Computer Modeling Handbook to include wildfire models, and remove existing wildfire components from the RBC formula. These are all practical steps that should be completed before implementing a new capital charge. NAMIC and RAA believe this exercise would be informative for regulators and industry to enhance the collective understanding of wildfire models for capital charge purposes. In essence, the NAIC should use wildfire as an opportunity to take an integrated approach on catastrophe modeling.

How the Current Wildfire RCAT Charge Development Process Differs from the Original Approach

Having a process established may set a precedent to be used again to approve other perils for the RCAT charge. And the process itself may drive further information discovery about the state of model usage, and the reliance on established actuarial methods, gaining additional understanding of a model (especially for the particular purpose). The current wildfire RCAT process, which lacks the precision needed for RBC purposes, significantly departs from the processes and procedures used in the development of the original RCAT charge. The peril-specific information gained earlier about models for earthquakes and hurricanes does not translate to wildfire. However, that earlier process offers lessons. Notably, we understand that the original approaches took the following commonsense steps that have not yet been taken for the wildfire RCAT:

- 1. <u>Gather Baseline-Use Information</u> An NAIC survey of industry about their use of the peril-specific models or requested information about historical wildfire losses allows regulators/NAIC to look for anomalies in the data and conduct impact studies to evaluate the effects on regulatory action levels.
- 2. <u>Prepare Regulatory Guidance and Educational Material</u> To prepare to evaluate a model for a new peril, there should be written and established standards to govern that review and to inform the development of the risk load for that peril. For example, the Catastrophe Computer Modeling Handbook that was adopted by the Property & Casualty Insurance (C) Committee in 2010 contains a section on evaluating models specific to earthquake and hurricane modelers. This regulatory review material was available to the Cat Risk (E) Subgroup when they were developing the hurricane and earthquake risk load.
- 3. <u>Set-up Review Standards</u> For fairness in understanding how the models will be evaluated, there should be understood and written protocol for validating, reviewing, and approving models. An established protocol will improve the review and approval process and help insurers and regulators gain mutual understanding. Unlike the Florida Commission on Loss Projection Methodology, there is no established institution to review or approve wildfire models. Given the desire to rely on catastrophe models for RBC purposes and the growing use and expansion of the models, the NAIC should support efforts to establish an independent wildfire (catastrophe) model validation process. Some insurance departments may not have the staff on board to review catastrophe models, including wildfire models.
- 4. <u>Avoid Double Counting by Removing Catastrophe Risk from Premium Risk Charges</u> Today catastrophe risk is already included in the premium risk charge on an aggregate basis for all perils not otherwise having a separate RCAT charge. To have a peril-specific charge, like for RCAT, it is crucial to first identify and remove historical catastrophe losses from industry and company loss ratios used in the premium risk charge (R5) of the RBC formula. Indeed, double-counting of catastrophe risk was avoided when developing the original RCAT charge because the NAIC followed a disciplined process to reduce the premium risk factors that included earthquake and hurricane losses. This same approach is needed for each peril if/as the charge is spiked out separately. To allow for the removal of wildfire losses from the underwriting premium risk charge, industry wildfire losses must be collected and removed from the existing premium risk factors.
- 5. Determine Common Triggers by Updating the U.S. and Non-U.S. Catastrophe Events List Each year since 2011, the Catastrophe Risk (E) Subgroup has published a list of U.S. and non-U.S. catastrophic events used for reporting catastrophe data in the RBC formula. The list of events has not been updated to include wildfire events. Standardizing these triggers provides more uniformity and information for use in reporting catastrophe data in the RBC filings.

The planned step-by-step plan (generally following the original approach) sets a better precedent for the path forward. A thoughtful and structured approach could extend beyond adding the wildfire RCAT charge to encompass expectations/processes as other perils are considered for the RCAT charge. There are many possible moving parts. As there is talk of forthcoming review of additional perils -- flood, convective storms, terrorism, and/or cyber risks -- working through the pipeline of NAIC, model, state, and insurer review/execution, having plans for understanding substance and for project management are both important.

We appreciate the opportunity to comment. If you have any questions, please feel free to contact Jonathan Rodgers (jrodgers@namic.org) or Scott Williamson (williamson@reinsurance.org).

Respectfully Submitted,

Jonathan Rodgere

Director of Financial and Tax Policy

Sett Villing

Scott Williamson Sr. Vice President Director of Analytics

CALCULATION OF CATASTROPHE RISK CHARGE RCAT PR027

Detail Eliminated To Conserve Space

The projected losses can be modeled using the following NAIC approved third party commercial vendor catastrophe models: AIR, <u>EQECATCoreLogic</u>, RMS, <u>KCC</u>, the ARA HurLoss Model, or the Florida Public Model for hurricane, as well as catastrophe models that are internally developed by the insurer or that are the result of adjustments made by the insurer to vendor models to represent the own view of catastrophe risk (hereinafter "own models").

However, an insurer seeking to use an own model must first obtain written permission to do so by the domestic or lead state insurance regulator. In the situation where the model output is used to determine the catastrophe risk capital requirement for a single entity, the regulator granting permission to use the own model is the domestic state. In the situation where the model output is used to determine the catastrophe risk capital requirement for a group, the grantor is the lead state regulator. In the situation where the insurer seeking permission is a non-U.S. insurer, the grantor shall be the lead state regulator. Under all scenarios, the regulator that is granting permission should inform other domestic states that have a catastrophe risk exposure and share the results of the review.

To obtain permission to use the own model, the insurer must provide the domestic or lead state insurance regulator with written evidence of each of the following:

- 1. The use of the own model is reasonable considering the nature, scale, and complexity of the insurer's catastrophe risk;
- 2. The own model is used for catastrophe risk management, capital assessment, and the capital allocation process and the model has been used for at least the last 3 years;
- 3. The perils included in the RBC Catastrophe Risk Charge have been validated by the insurer and that these perils include both US and global exposures, where applicable;
- 4. The own model has been developed using reasonable data and assumptions and that model results used in determining the RBC Catastrophe Risk Charge reflect exposure data that is no older than six months;
- 5. The insurer has individuals with experience in developing, testing and validating internal models or engages third parties with such experience. The insurer must provide supporting model documentation and a copy of the latest validation report and the insurer is solely responsible for the relevant cost. For each peril included in the RBC Catastrophe Risk Charge, the validation report should attest that the projected losses are a reasonable quantification of the exposure of the reporting entity. The validation report must provide a description of the scope, content, results and limitations of the validation, the individual qualifications of validation team and the date of the validation. Both the model documentation and the model validation report must be provided at a minimum once every five years, or whenever the lead or domestic state calls an examination; whenever there is a material change in the model; or whenever there is a material change in the insurer's exposure to catastrophe exposure.
- 6. The results of the own model should be compared with the results produced by at least one of the following models: AIR, <u>EQECATCoreLogic</u>, RMS, <u>KCC</u>, ARA HurLoss, or the Florida Public Model. The insurer must provide the comparison and an explanation of the drivers of differences between the results produced by the internal model vs. results produced by the selected prescribed model.
- 7. If the own model has been approved or accepted by the non-U.S. group-wide supervisor for use in the determination of regulatory capital, the insurer must submit evidence, if available, from the non-US group-wide supervisor of the most recent approval/acceptance including the description of scope, content, results and limitations of the approval/acceptance process and dates of any planned future approval/acceptance, if known. The name and the contact information of a contact person at the non-US group-wide supervisor should also be provided for questions on the approval/acceptance process.

If the lead or domestic state determines that permission to use the own model cannot be granted, the insurer shall be required to determine the RBC Catastrophe Risk Charge through the use of one of the third party commercial vendor models (AIR, <u>EQECATCoreLogic</u>, RMS, <u>KCC</u>, ARA HurLoss (hurricane only)), or the Florida Public Model for hurricane, as advised by the lead state or domestic state.

If the lead or domestic state determines that permission to use the own model can be granted to determine the RBC Catastrophe Risk Charge, the model will be subject to additional review through the ongoing examination process. If, as a result of the examination, the lead or domestic state determines that permission to use the own model should be revoked, the insurer may be required to resubmit the risk-based capital filing and any past filings so impacted where own model was used, as directed by the lead state or domestic state. If the insurer obtains permission to use the own model, it cannot revert back to using third party commercial vendor models to determine the RBC Catastrophe Risk Charge in subsequent reporting periods, unless this is agreed with the lead or domestic state that granted permission.

The contingent credit risk charge should be calculated in a manner consistent with the way the company internally evaluates and manages its modeled net catastrophe risk.

Note that no tax effect offsets or reinstatement premiums should be included in the modeled losses. Further note that the catastrophe risk charge is for earthquake and hurricane risks only.

As per the footnote on this page, modeled losses to be entered PR027A and PR027B in Lines (1) through (4) are to be calculated using one of the third party commercial vendor models – AIR, <u>EQECATCorelogic</u>, RMS, <u>KCC</u>, ARA HurLoss (hurricane only); or the Florida Public Model (hurricane only) or the insurer's own catastrophe model; and using the insurance company's own insured property exposure information as inputs to the model. The insurance company may elect to use the modeled results from any one of the models, or any combination of 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 exposure data, modeling, and assumptions that the insurer uses in its own internal catastrophe risk management process. Any exceptions must be explained in the required *Attestation Re: Catastrophe Modeling Used in RBC Catastrophe Risk Charges* within this RBC Report.

The Grand Total (PR027) page includes an interrogatory to support an exemption from filing the catastrophe risk charge. Any company qualifying for exemption from the earthquake risk charge must identify the particular criteria from among (1a), (1b), (2) and (3) that provides its qualification for exemption, and may leave the other three items from this group of four possible qualifications for exemption blank; except identification of criteria (3) as the basis for the exemption requires a further answer to (3a) and (3b).). If an insurer does not write or assume earthquake risks leaving no gross exposure, enter an "X" in interrogatory 3, with no need to fill in (3a) and (3b). Any company qualifying for exemption from the hurricane risk charge must identify the particular criteria from among (4a), (4b), (5) and (6) that provides its qualification for exemption, and may leave the other three items from this second group of four possible qualifications for exemption blank. If the company qualifies for exemption from the earthquake risk charge, page PR027A and line (1) on this page may be left blank. If an insurer does not write or assume hurricane risk leaving no gross exposure, enter an "X" in interrogatory 6.

In general, the following conditions will qualify a company for exemption: if it uses an intercompany pooling arrangement or quota share arrangement with U.S. affiliates covering 100% of its earthquake and hurricane risks such that there is no exposure for these risks; if it has a ratio of Insured Value – Property to surplus as regards policyholders of less than 50%; or if it writes Insured Value – Property that includes hurricane and/or earthquake coverage in catastrophe-prone areas representing less than 10% of its surplus as regards policyholders.

"Insured Value – Property" includes aggregate policy limits for structures and contents for policies written and assumed in the following annual statement lines – Fire, Allied Lines, Earthquake, Farmowners, Homeowners, and Commercial Multi-Peril.

"Catastrophe-Prone Areas in the U.S." include:

- i. For hurricane risks, Hawaii, District of Columbia and states and commonwealths bordering on the Atlantic Ocean and/or the Gulf of Mexico including Puerto Rico.
- ii. For earthquake risk or for fire following earthquake, any of the following commonwealth or states: Alaska, Hawaii, Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Puerto Rico, and geographic areas in the following states that are in the New Madrid Seismic Zone Missouri, Arkansas, Mississippi, Tennessee, Illinois and Kentucky.

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