Date: 12/9/21

Virtual Meeting
CATASTROPHE RISK (E) SUBGROUP
Thursday, December 16, 2021
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, Chair	Connecticut	Halina Smosna	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 2021-15-CR (Adding KCC Models)—*Wanchin Chou (CT)* Attachment A

2. Consider Exposure of Proposal 2021-17-CR (Adding Wildfire Peril for Informational Purposes Only) —*Wanchin Chou (CT)* Attachment B

3. Hear an Update from the Catastrophe Model Technical Review Ad Hoc Group —*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

[ ] Capital Adequacy (E) Task Force	[ ] Health RBC (E) Working Group	[ ] Life RBC (E) Working Group
[x] Catastrophe Risk (E) Subgroup	[ ] Investment RBC (E) Working Group	[ ] Operational Risk (E) Subgroup
[ ] C3 Phase II/ AG43 (E/A) Subgroup	[ ] P/C RBC (E) Working Group	[ ] Longevity Risk (A/E) Subgroup

	DATE: 10/27/21	**FOR NAIC USE ONLY**
CONTACT PERSON:	**Eva Yeung**	Agenda Item # 2020-11-CR
TELEPHONE:	**816-783-8407**	Year 2022
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, 7th Floor**	[x] EXPOSED 10/27/21
	Hartford, CT 06103	[ ] OTHER (SPECIFY)

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

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

DESCRIPTION OF CHANGE(S)

The proposed change would add the KCC as one of the approved third party commercial vendor catastrophe models.

REASON OR JUSTIFICATION FOR CHANGE **

To keep the consistency with other third party commercial vendors for earthquake and hurricane catastrophe models. KCC has got the approval from the Florida Commission on hurricane loss projection methodology on 6/19/2019 and 6/4/2021.

Additional Staff Comments:

10/27/21 – The Subgroup agreed to expose this proposal for a 30-day public comment period ending Nov. 26.

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

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, ~~EQECAT~~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, ~~EQECAT~~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, ~~EQECAT~~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 PR027A and PR027B in Lines (1) through (4) are to be calculated using one of the third party commercial vendor models – AIR, ~~EQECAT~~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 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 the company qualifies for exemption from the hurricane risk charge, page PR027B and line (2) on this page may be left blank. If an insurer does not write or assume hurricane risks 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.

Detail Eliminated To Conserve Space

CALCULATION OF CATASTROPHE RISK CHARGE FOR EARTHQUAKE PR027A

	Earthquake	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) Y/N
(5)	Has the company reported above, its modeled earthquake losses using an occurrence exceedance probability (OEP) basis?	

		Reference	(6) Amount	Factor	(7) RBC Requirement (C(6) * Factor)
(6)	Net Earthquake Risk	L(2) C(2)	0	1.000	0
(7)	Contingent Credit Risk for Earthquake Risk	L(2) C(3) - C(4)	0	**0.018**	0
(8)	Total Earthquake Catastrophe Risk (AEP Basis)	If L(5) C(5) = "N", L(8) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(9)	Total Earthquake Catastrophe Risk (OEP Basis)	If L(5) C(5) = "Y", L(9) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(10)	Total Earthquake Catastrophe Risk	L(8) C(7) + L(9) C(7)			0

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, **Corelogic**, RMS, **or 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 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) Y/N
(5)	Has the company reported above, its modeled hurricane losses using an occurrence exceedance probability (OEP) basis?	

		Reference	(6) Amount	Factor	(7) RBC Requirement (C(6) * Factor)
(6)	Net Hurricane Risk	L(2) C(2)	0	1.000	0
(7)	Contingent Credit Risk for Hurricane Risk	L(2) C(3) - C(4)	0	**0.018**	0
(8)	Total Hurricane Catastrophe Risk (AEP Basis)	If L(5) C(5) = "N", L(8) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(9)	Total Hurricane Catastrophe Risk (OEP Basis)	If L(5) C(5) = "Y", L(9) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(10)	Total Hurricane Catastrophe Risk	L(8) C(7) + L(9) C(7)			0

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, **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.

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National Association of Insurance Commissioners
Catastrophe Risk (E) Subgroup
of the Property and Casualty Risk-Based Capital (E) Working Group

Proposal to Update the List of
NAIC Approved Third Party Commercial Vendor Catastrophe Models
October 27 Notice of Exposure

November 24, 2021

Thank you for the opportunity to review the proposed changes to the NAIC Property/Casualty RBC Blanks and Instructions which would update the list of approved third-party commercial vendor catastrophe models for estimating losses in PR027A and PR027B.

The RBC process is an essential part of the U.S. solvency framework, and Karen Clark & Company (KCC) is appreciative of the NAIC's efforts to keep the RBC calculation current with the evolving risk landscape and insurer needs. KCC is an active participant in the Catastrophe Risk (E) Subgroup's current effort to expand the RBC formula to include the quantification of U.S. wildfire risk. KCC looks forward to supporting the NAIC in any future initiatives to either refine the quantification of existing RBC catastrophe perils or to expand the catastrophe risks quantified to better capture emerging threats to insurer solvency.

KCC supports the proposed update to the list of NAIC approved catastrophe models and appreciates the Subgroup's goal of keeping the list current with market usage. For years, leading insurers have utilized KCC catastrophe models in ratemaking, rating agency questionnaires, reinsurance purchase decisions, and capital adequacy analyses, and for consistency have wanted to use the same KCC models in NAIC RBC calculations. This proposed update will enable much needed uniformity across insurers internal analyses and the RBC Catastrophe Risk Charge calculations.

The proposed update will also ensure that similar criteria is being applied in approving third-party vendors. Historically, the NAIC has approved catastrophe vendor models that have been in market use for several years, have undergone multiple updates, have been successfully field tested against insurer's claims data after numerous actual events, and have been externally reviewed by recognized industry experts. The KCC models meet all these criteria, and as a prime example the KCC hurricane model has been approved by the Florida Commission on Hurricane Loss Projection Methodology on multiple occasions. Including KCC in the list of third-party commercial vendor catastrophe models will be a clear indication that equivalent criteria has been consistently applied when approving vendors and we strongly support this proposal.

Thank you again for the opportunity to comment.

Best regards,

Glen Daraskevich
Senior Vice President

Capital Adequacy (E) Task Force

RBC Proposal Form

[ ] Capital Adequacy (E) Task Force	[ ] Health RBC (E) Working Group	[ ] Life RBC (E) Working Group
[ ] Catastrophe Risk (E) Subgroup	[ ] Investment RBC (E) Working Group	[ ] Operational Risk (E) Subgroup
[ ] C3 Phase II/ AG43 (E/A) Subgroup	[ ] P/C RBC (E) Working Group	[ ] Longevity Risk (A/E) Subgroup

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

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

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

DESCRIPTION OF CHANGE(S)

The proposed change would 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 adding wildfire as one of the catastrophe perils in the Rcat component.

Additional Staff Comments:

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

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

The catastrophe risk charge for earthquake (PR027A), 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 PR027A, 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 Interrogatory on page (PR027INT) 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 PR027INT 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 PR027 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 PR027INT interrogatory 6. If the company qualifies for exemption from the hurricane risk charge, page PR027B and line (2) on PR027 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 hurricane 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, 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 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.

"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.

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 or OEP reported results (not both), consistent with the way the company internally evaluates and manages its modeled net catastrophe risk.

Column (5) – Y/N
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 Schedule PR027 of this Risk-Based Capital Report were 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 managemnt process, with the following exceptions:

(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 Rcat risk charges: (Include which models are used in what combinations for each of the Rcat charges; what key modeling assumptions are used, including but 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 Rcat catastrophe risk charges (provide attachments if 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 ____________ Middle ____________ Title

(7) Email: ____________ (7) Phone: ____________ Date: ____________

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

	Wildfire	Reference	(1) Direct and Assumed	(2) Net	3† Ceded Amounts Recoverable	(4)†† Ceded Amounts Recoverable with zero Credit Risk Charge
			Modeled Losses			
(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) Y/N
(5)	Has the company reported above, its modeled wildfire losses using an occurrence exceedance probability (OEP) basis?	

		Reference	(6) Amount	Factor	(7) RBC Requirement (C(6) * Factor)
(6)	Net Wildfire Risk	L(2) C(2)	0	1.000	0
(7)	Contingent Credit Risk for Wildfire Risk	L(2) C(3) - C(4)	0	0.018	0
(8)	Total Wildfire Catastrophe Risk (AEP Basis)	If L(5) C(5) = "N", L(8) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(9)	Total Wildfire Catastrophe Risk (OEP Basis)	If L(5) C(5) = "Y", L(9) C(6) = L(6) C(7)+ L(7) C(7), otherwise "0"	0	1.000	0
(10)	Total Wildfire Catastrophe Risk	L(8) C(7) + L(9) C(7)			0

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	(1) 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 (R_{cat})	SQRT(L(1)^2 + L(2)^2	0
(4a)	**Total Catastrophe Risk (R_{cat} For Informational Purposes Only)**	SQRT(L(1)^2 + L(2)^2 **+L(3)^2)**	0

Lines 3 and 4a are for informational purposes only

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

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

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.**

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

			(1)
R4 - Underwriting 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	0
(57)	Total Adjusted Unpaid Loss/Expense Reserve RBC	PR017 L(15)C(20)	0
(58)	Excessive Premium Growth - Loss/Expense Reserve	PR016 L(13) C(8)	0
(59)	A&H Claims Reserves Adjusted for LCF	PR024 L(5) C(2) + PR023 L(6) C(4)	0
(60)	Total R4	L(56)+L(57)+L(58)+L(59)	0

R5 - Underwriting Risk - Net Written Premium			
(61)	Total Adjusted NWP RBC	PR018 L(15)C(20)	0
(62)	Excessive Premium Growth - Written Premiums Charge	PR016 L(14)C(8)	0
(63)	Total Net Health Premium RBC	PR022 L(21)C(2)	0
(64)	Health Stabilization Reserves	PR025 L(8)C(2) + PR023 L(3) C(2)	0
(65)	Total R5	L(61)+L(62)+L(63)+L(64)	0

Rcat - Catastrophe Risk			
(66)	Total Rcat	PR027 L(4) C(1)	0

(67)	Total RBC After Covariance Before Basic Operational Risk = R0+SQRT(R1^2+R2^2+R3^2+R4^2+R5^2+Rcat^2)	0

(68)	Basic Operational Risk = 0.030 x L(67)	**0**
(69)	C-4a of U.S. Life Insurance Subsidiaries (from Company records)	0
(70)	Net Basic Operational Risk = Line (68) - Line (69) (Not less than zero)	**0**
(71)	Total RBC After Covariance including Basic Operational Risk = L(67)+ L(70)	**0**

(72)	Authorized Control Level RBC including Basic Operational Risk = .5 x L(71)	0

SCHEDULE P PART 1X - LINE OF BUSINESS PR1XX

Column 28III = Column 28C - Column 28I - Column 28II

						Earthquake and Hurricane Experience*				Wildfire Catastrophe Experience*				
		(3) Premiums Earned, Net	(24) Total Net Losses and Expenses Unpaid	(28) Total Losses and Expenses Incurred, Net	(24A) Total U.S. Net Losses Unpaid	(28A) Total U.S. Losses Incurred, Net	(24B) Total Non-U.S. Net Losses Unpaid	(28B) Total Non-U.S. Losses Incurred, Net	(28C) Total Losses and Expenses Incurred, Net excluding Earthquake and Hurricane Losses	(24I) Total U.S. Net Losses Unpaid	(28I) Total U.S. Losses Incurred, Net	(24II) Total Non-U.S. Net Losses Unpaid	(28II) Total Non-U.S. Losses Incurred, Net	(28III) Total Losses and Expenses Incurred, Net excluding Earthquake, Hurricane and Wildfire Losses
(2)	2013	0		0		0		0	0		0		0	0
(3)	2014	0		0		0		0	0		0		0	0
(4)	2015	0		0		0		0	0		0		0	0
(5)	2016	0		0		0		0	0		0		0	0
(6)	2017	0		0		0		0	0		0		0	0
(7)	2018	0		0		0		0	0		0		0	0
(8)	2019	0		0		0		0	0		0		0	0
(9)	2020	0		0		0		0	0		0		0	0
(10)	2021	0		0		0		0	0		0		0	0
(11)	2022	0		0		0		0	0		0		0	0
(12)	Totals		0		0		0			0		0		

vendor link items

manual 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.