

SFG-NW-5

**State Farm General Insurance Company
California Non-Tenant Homeowners
Catastrophe Adjustment Excluding Fire Following Earthquake Provision**

In accordance with CCR §2644.5, we have developed a catastrophe adjustment factor based on at least 20 years of catastrophe data as described in this exhibit. Losses are coded as "catastrophe" if they result from a single event that is expected to produce at least 500 claims and \$500,000 in anticipated indemnity payments within the state of California for all Fire lines or if the claim is a wildfire designated claim. The inclusion of all wildfire designated claims allows a more holistic view of the wildfire risk and provides additional stability to our non-catasrophe trends and development.

For ratemaking purposes, all catastrophe (CAT) losses are removed from our loss data. CAT losses are analyzed separately and a CAT provision is developed according to the following procedure and used in the ratemaking formula.

I. Amount of Insurance Years Exposure Base

The Amount of Insurance Years statistic (AIY) measures \$1,000's of building insurance in force for one year. For example, a \$100,000 dwelling insured on January 1st and in force continuously for that year equals 100 Amount of Insurance Years. Amount of Insurance Years reflects changing values and represents an accurate measure of our exposure to catastrophic loss.

II. Catastrophe Provision per AIY (Excluding Fire Following Earthquake)

Because catastrophes can be infrequent events, many years of history are needed to determine a provision. Contract changes and changes in the number of policies written in catastrophe prone areas, however, make it prudent to give greater weight to more recent years. Please see Exhibit 9 - Page 2 for the development of the CAT/AIY.

	Non-Tenant Homeowners
CAT Provision per AIY excluding FFEQ	<u>0.5087</u>

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(1) Calendar Year	(2) AIY	(3) CAT Loss & DCCE	(4) CAT/AIY (3) / (2)	(5) Weight	(6) NCAT Loss & DCCE
1990	128,861,978	77,600,768	0.602	1.2%	234,507,017
1991	142,028,504	218,184,040	1.536	1.2%	221,848,265
1992	158,630,981	43,303,300	0.273	1.2%	257,613,332
1993	172,623,391	107,166,078	0.621	1.2%	290,942,167
1994	182,199,026	43,408,462	0.238	1.2%	310,083,449
1995	185,917,462	101,140,690	0.544	1.2%	278,254,939
1996	186,104,814	50,620,812	0.272	1.2%	261,002,722
1997	186,488,444	17,247,444	0.092	1.2%	263,750,015
1998	191,097,338	50,118,115	0.262	1.2%	297,371,201
1999	202,400,945	10,046,637	0.050	1.2%	297,321,911
2000	213,448,338	17,018,051	0.080	1.9%	339,879,449
2001	225,030,145	22,130,172	0.098	2.0%	434,776,741
2002	240,324,685	35,509,431	0.148	2.1%	428,593,056
2003	243,610,344	461,200,760	1.893	2.2%	313,315,120
2004	260,576,783	-95,030,522	-0.365	2.3%	289,428,804
2005	289,827,403	32,107,759	0.111	2.5%	257,772,432
2006	320,061,744	18,566,051	0.058	2.6%	327,476,035
2007	346,610,084	309,218,258	0.892	2.7%	406,251,367
2008	369,369,713	173,497,117	0.470	2.9%	427,408,903
2009	388,245,682	-12,114,867	-0.031	3.0%	447,135,100
2010	395,460,850	103,625,205	0.262	3.2%	387,376,203
2011	397,170,392	17,606,251	0.044	3.3%	408,729,382
2012	402,597,208	39,507,226	0.098	3.5%	435,578,230
2013	414,665,876	36,697,760	0.088	3.7%	411,194,492
2014	432,660,854	47,482,937	0.110	3.9%	389,493,403
2015	455,545,917	211,948,945	0.465	4.1%	414,568,852
2016	474,012,598	74,778,797	0.158	4.3%	547,357,475
2017	488,192,348	2,819,690,783	5.776	4.5%	544,200,558
2018	513,642,444	517,948,394	1.008	4.8%	537,189,831
2019	545,473,257	124,299,428	0.228	5.0%	647,205,565
2020	592,758,385	-218,854,932	-0.369	5.3%	598,150,352
2021	674,164,147	18,252,961	0.027	5.6%	698,165,728
2022	776,440,162	77,162,159	0.099	5.9%	889,774,608
2023	845,640,269	205,743,447	0.243	6.2%	1,000,584,992

Catastrophe Ratio (Column (4) weighted by Column (5)): 0.5087

(3) Non-Hurricane Catastrophe Loss and DCCE net of subrogation. Adjustments have been made as needed to incorporate any significant changes in our contract and in the distribution of our book of business.

NOTE: Calendar year 2020 and 2021 CAT loss & DCCE reflects subrogation recoveries attributed to wildfire events that occurred in calendar years 2017 and 2018.

(5) The latest year is given a weight of 6.2%, with each prior year receiving 5% less weight back to 2000. For the years 1990-99, the remainder of the distribution was spread evenly across the 10 year period.

(6) Non-Catastrophe Loss and DCCE net of subrogation. Adjustments have been made as needed to incorporate any significant changes in our contract and in the distribution of our book of business.

The total outstanding California catastrophe reserves as of 12/31/2023 is \$179,681,733 for the Non-Tenant Homeowners program.

**State Farm General Insurance Company
California Non-Tenant Homeowners
Catastrophe Provision
Fire Following Earthquake Provision**

State Farm's Homeowners Catastrophe Provision calculation described in the preceding pages is based on a statistical analysis of historical catastrophe losses. There is exposure to loss due to fire following an earthquake that is not reflected in this historical experience. Any catastrophe provision based on historical data should be modified to more appropriately recognize the Homeowners exposure due to fire following an earthquake.

Provision for Fire Following Earthquake

Fire conflagrations following earthquakes, as evidenced by the 1923 Great Kanto Earthquake and the 1906 San Francisco Earthquake, can cause enormous property damage and loss of life. The major 1989 Bay area earthquake and the 1994 Northridge earthquake were not of the magnitude expected to produce a catastrophic conflagration. Fortunately, neither occurred during extreme fire conditions. In California, not since the San Francisco earthquake of 1906 has there been a great earthquake of the magnitude expected to produce a catastrophic conflagration. It is, therefore, inappropriate to rely solely on historical insurance data to assess the exposure to fire following earthquake. It is necessary to look to definitive scientific studies, scientific modeling and judgment to supplement historical data.

I. Fire Following Earthquake: Conflagration Potential in the Greater Los Angeles, San Francisco, Seattle and Memphis Areas

This study, produced by Drs. Charles Scawthorne and Mahmoud Khater for the Earthquake Project (subsequently known as the Natural Disaster Coalition), utilizes the expertise of EQECAT, Inc. to produce estimates of fire following earthquakes of various magnitudes in the San Francisco and Los Angeles areas of California.

From the Executive Summary of that report:

Fire following earthquake is a very serious threat to insurance companies. The fire losses shown in this study are substantially higher than the insured shake damage losses projected in a 1990 California Insurance Department study (\$6 billion for insured shake damage in the San Francisco Bay area, \$8.5 billion for insured shake damage in the Los Angeles region). The reason for this is that nearly all property is insured for fire, but fewer than 20% of homes and business properties in the two affected areas are insured for shake damage, even though California law requires insurers to offer shake damage to property owners.

The report summarizes property loss in a Bay Area quake to be 1.1% of property value, .2 to .6% for other California faults. The summary includes all property loss, personal and commercial as well as insured and uninsured. Personal and commercial splits are not available in the report. The report, therefore, is only used to illustrate the magnitude of the exposure.

II. Computer Modeling for Fire Following Earthquake

State Farm is utilizing the earthquake simulation models from CoreLogic RQE v23.0, RMS RiskLink 23.0 and AIR Touchstone 10.0 to provide annual fire following earthquake property loss estimates. The RQE model is used by the CEA for earthquake loss estimates in pricing. The RQE model as well as RMS and AIR incorporate expertise in the fields of engineering, seismology, geology, statistics and computer science to produce a library of earthquake events, each with associated probabilities of occurrence. This library is intended to represent tens of thousands of years of possible earthquakes. For AIR, the 50K year event set was used in the analysis.

For each of these stochastically simulated events, the models are capable of overlaying the physical characteristics of the event against the portfolio of the insured exposures. Such exposures are described by geographic locations, values, policy forms (types of coverage), limits, deductibles and construction characteristics, and are related to the models' computed seismic activity, associated damage, and accompanying financial losses. To compute the expected annual loss, the losses from each simulated event are then weighted by the probability of that event's occurrence.

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Given the large volume of simulated events and the fact that theoretically all relevant available information has been taken into account in the model simulations, the model results are considered fully credible.

Shaking intensity is the basis of estimating fire following earthquake losses. In addition to shaking intensity, all three fire following earthquake models estimate severity and frequency of loss based on the underlying physical parameters that impact the loss. Additional loss factors include:

1. Ignition Frequency: Conflagration risk increases with the number of ignitions.
2. Fuel Source: Wooden structures greatly increase the fire risk, for a given ignition frequency (1906 and 1923 events had predominantly wooden construction).
3. Burn Rate: The rate at which a fire spreads is dependent on the fuel source and building density.
4. Fire Fighting Capacity: The model estimates the potential fire fighting capacity, including number of fire stations, fire engines and manpower.
5. Water supply vulnerability: Even with adequate fire fighting capacity, failed water supply systems will imperil fire department functionality. The network based model includes water supply vulnerability (pipeline breaks), including storage reservoirs, and alternate (redundant) waterline routes.
6. Wind speed: Strong winds can dramatically increase fire severity, as evidenced by the 1923 Kanto and the 1991 Oakland Hills fire. Therefore, the variance in local wind speeds is essential in estimating the frequency and event severity.
7. Seasonality: Wet or dry weather conditions can retard or contribute to the fire loss.

III. Fire Following Earthquake Provision

State Farm General Insurance Company's fire exposure as of 9/30/2023 is used for the simulations to determine the annual fire following earthquake loss per AIY for each model. The statewide annual fire following earthquake loss per AIY provision is the simple average of the results from the three models. This loss per AIY is adjusted to reflect defense and cost containment expense (DCCE) since this cost is not included in the models' results. The DCCE provision of 4.4% is selected, resulting in the final Fire Following Earthquake provisions shown below.

	<u>Non-Tenant Homeowners</u>
RQE Model Loss per AIY	0.0208
RMS Model Loss per AIY	0.0529
AIR Model Loss per AIY	0.0262
Average	0.0333
DCCE factor	1.0440
FFEQ Provision per AIY	0.0347

State Farm General Insurance Company
California Non-Tenant Homeowners
Catastrophe Adjustment

	Fiscal Calendar/Accident Year Ending 20234
	Non-Tenant Homeowners
(1) NC Loss + DCCE developed and trended	1,308,527,845
(2) CAT Provision per AIY excluding FFEQ	0.5087
(3) FFEQ Provision per AIY	0.0347
(4) CAT Provision per AIY including FFEQ	0.5435
(5) Projected AIY	1,056,818,926
(6) CAT Provision Dollars	574,343,606
(7) CAT Provision to NC Loss + DCCE	0.439
(8) Catastrophe Adjustment Factor incl FFEQ	1.439

- (1) (Historic Losses x To-Ult Factor (Exhibit 7) x Loss & DCCE Trend Factor (Exhibit 8))
+ (Historic DCCE x To-Ult Factor (Exhibit 7) x Loss & DCCE Trend Factor (Exhibit 8))
(2) Exhibit 9 - Page 1
(3) Exhibit 9 - Page 4
(4) = (2) + (3)
(5) See calculation below
(6) = (4) x (5)
(7) = (6) / (1)
(8) = (7) + 1

	Fiscal Calendar/Accident Year Ending 20234
	Non-Tenant Homeowners
AIY	845,640,269
Projected Annual AIY Trend	9.3%
Trend Date	7/1/2023
Projection Date	1/1/2026
Years Trended	2.507
Factor	1.250
Projected AIY	1,056,818,926

**State Farm General Insurance Company
California Non-Tenant Homeowners
Catastrophe Subrogation Recoveries**

Calendar Year	Recoveries*
	Non-Tenant Homeowners
2004	176,003
2005	137,690
2006	72,493
2007	(11,386)
2008	168,400
2009	104,101,926
2010	11,051
2011	21,126,800
2012	110,390
2013	4,410,339
2014	6,596,353
2015	166,382
2016	60,372
2017	29,713,055
2018	10,033,435
2019	(1,490,434)
2020	1,211,771,893
2021	284,346,678
2022	65,761,798
2023	42,518,935

* Subrogation data prior to 2004 is not readily available

**State Farm General Insurance Company
California Non-Tenant Homeowners
Major Catastrophe Events**

Year	Event Name	Associated Peril(s)
1991	Oakland Hills Wildfire	Fire
2003	Simi/Cedar/Oak Wildfires	Fire
2017	Tubbs/Northern Wildfire	Fire
2018	Camp Wildfire	Fire
2018	Woolsey Wildfire	Fire
2020	August 2020 Wildfires	Fire