The California Earthquake Authority

Providing Residential Earthquake Insurance and Mitigation Programs to the State of California

By Janiele Maffei, S.E.

The 1984 California Mandatory Offer Law required insurers to offer earthquake insurance as a condition of participating in the California residential insurance market. After suffering unprecedented insured losses from the 1994 Northridge earthquake, almost all California residential insurers stopped selling homeowner's insurance throughout the state. California's legislature stepped in with a solution in 1996 by creating the California Earthquake Authority (CEA), a "public instrumentality" of the state. Through its participating insurers, the CEA provides more than 66% of the residential earthquake insurance market in California. However, nearly 90% of California homeowners do not have earthquake insurance. With a strategic plan to Educate, Mitigate, and Insure Californians, the CEA endeavors to change that.

However, the Mandatory Offer Law does not require that the insured purchase earthquake insurance. California, with two-thirds of the nation's earthquake risk and about one-fifth of the nation's mortgage debt, has a residential earthquake insurance take-up rate (percentage of homeowners who purchase insurance) of just over 10 percent.

The approximately $10 billion in residential insured losses (out of $20 billion in total residential losses which represented half of the $40 billion in total damages) resulting from the Northridge earthquake exceeded the premiums collected on earthquake insurance in the previous 30 years. The resulting insurance crisis threatened California's residential property market. In addition to addressing a serious insurance and mortgage crisis, the legislature re-committed to making earthquake insurance available to California homeowners by refusing to rescind the Mandatory Offer Law. It took over 18 months for the Insurance Commissioner and the legislature to create the California Earthquake Authority (CEA) and enlist the original 13 participating insurers (PIs) to pay an operating-capital levy voluntarily. The CEA was initially thought to be a temporary solution, and it began by writing the minimum, bare-bones coverages specified in its authorizing law.

By law, the CEA is a "public instrumentality" of the State of California that provides basic residential earthquake insurance and manages a residential mitigation program. The publicly managed authority is governed by a three-member governing board consisting of the Governor, the Treasurer, and the Insurance Commissioner, each of whom may name designees to serve as board members in their place. The Speaker of the Assembly and the Chairperson of the Senate Committee on Rules serve as nonvoting, ex officio members of the board and may name designees to serve in their place.

CEA is privately financed by the investment of PIs who now number over 25 and by the collection of policyholder premiums. The CEA is not part of the State of California's budget. Nor are CEA's financial obligations backed by either the state or federal government. The claim paying capacity of the CEA is currently composed of just under $6 billion in capital, $8.5 billion in reinsurance, and other financing mechanisms that total just over $17 billion. This capacity could handle a repeat of the 1906 earthquake or two recurrences of the Northridge earthquake.

At the time of the Northridge earthquake, there was three times the number of insured households in the affected area than there are in 2019. All of the insured had significantly underpriced earthquake insurance. The CEA enabling legislation mandated that rates be actuarially sound and be determined by the best available science to rectify this serious issue. Since 2004, and with the Governing Board's support and approval, CEA has worked continuously, under contract, with three widely recognized, commercially available catastrophe-loss models/modelers (known as "cat" models/modelers):

- AIR-Worldwide
- EQECAT (a wholly-owned subsidiary of Core Logic Solutions, LLC), and
- Risk Management Solutions (RMS)

All of these firms were founded between 1987 and 1991 when Cat modeling was in its infancy. Cat modeling is a computerized system that generates simulated catastrophic events, such as hurricanes or earthquakes, and calculates the insured loss of those events.

Before the availability of large-capacity computer systems in the late 1980s, exposure was quantified using empirical methods. In 1992, Hurricane Andrew devastated Florida with $26.5 billion in direct damages followed two years later by the Northridge earthquake that caused $20 billion in insured losses (all buildings). Utilizing empirical methods, insurers had dramatically underestimated their exposure to a Northridge-like earthquake. The Northridge earthquake and other disasters demonstrated the need for effective catastrophe-loss modeling.

California earthquake models are continually updated, most recently by the Uniform California Earthquake Rupture Forecast (UCERF3) and Next Generation Attenuation (NGA West 2) models. Committed to funding the development of programs that update earthquake models, the CEA partially funded both UCERF3 and NGA West 2. The CEA modeling firms recently utilized these new developments and data from international earthquakes to update their models. The results led to changes to some of CEA's insurance rates that will be effective on July 1, 2019.

Insurance

In 2016, with just under $13 billion in claim-paying capacity, the CEA made significant changes to its residential earthquake insurance policy. Homeowners were offered significantly more choice in coverage and deductibles. For the first time, CEA allowed homeowners to choose between purchasing all of their coverages together under one dwelling deductible or to have separate deductibles for dwelling and personal property. Separate deductibles can be beneficial for the homeowner who has experienced contents damage in a moderate earthquake, as they do not have to meet the larger structural deductible.

Also available since 2016 has been a range of deductibles: 5%; 10%; 15%; 20%; and 25%. These significant changes, combined with as much as a 20% premium hazard reduction discount for homeowners who retrofit their older home, have spurred tremendous growth. Between 2006 and 2015, the CEA's average annual policy growth was about 6,700 policies. Since the changes introduced in January 2016, CEA annual policy counts have increased significantly, as shown here:

- 2016: 52,000
- 2017: 90,000
- 2018: 26,000

These increases put the CEA's policy count over 1,000,000 in late 2017. The CEA estimates that some of the increases in 2017 were due to the increased awareness about the need for insurance to prevent catastrophic financial losses in light of the numerous hurricanes that severely damaged U.S. states and territories, as well as the Mexico earthquakes. These significant increases demonstrate that the new coverage and deductible options are resonating with homeowners looking for earthquake insurance that meets their needs and budgets.

Mitigation

The reduction of earthquake damage through mitigation has been a charge of the CEA since its inception. CEA enabling legislation requires the CEA Board to set aside 5% of investment income or five million dollars, whichever is less, each year into a subaccount of the CEA fund called the Loss Mitigation Fund (LMF). The LMF was intended for programs to be applied to supply grants and loans or loan guarantees to dwelling owners who complete seismic retrofits. The fund was intended to serve all Californians, not just policyholders. Unfortunately, the statute that established the LMF did not expressly provide for full and flexible staffing to implement the CEA's mitigation mandate. Until the arrival of CEA Glenn Pomeroy, various mitigation programs were undertaken with limited success in deploying available funding. In 2008, Mr. Pomeroy and his new Chief Communications Officer, Chris Nance, worked with former FEMA Administrator James Lee Witt to organize workshops throughout the state to determine what mitigation program would best serve California. The CEA, along with other consultants such as Ines Pearce, began to formulate a plan to retrofit unbolted and unbraced cripple wall houses in a program similar to the FEMA Project Impact program established in Seattle, Washington. To effectively manage and promote a statewide seismic retrofit program, the CEA entered into a Joint Powers Authority (JPA) agreement with the California Governor's Office of Emergency Services in 2011 to create the California Residential Mitigation Program (CRMP).

In 2010, the Governor signed into law AB 2746 (Blakeslee) authorizing the CEA to contract for the services of a Chief Mitigation Officer (CMO). A national search was performed, and the CEA hired Structural Engineer Janiele Maffei as the CMO in May 2011. The bill also authorized the CEA to accept grants and gifts of property and services for the LMF or the related residential retrofit program from federal, state, and local government sources and private sources.

Since 2011, the CEA mitigation department has developed programs to provide support or programs for the following mitigation needs:

- Seismic retrofit incentives,
- Single-family wood-frame seismic retrofit code development, and
- Research on the seismic performance of wood-framed, single-family structures.

The California Residential Mitigation Program (CRMP) was established to carry out mitigation programs to assist California homeowners who wish to seismically retrofit their houses. CRMP's goal is to provide grants and other types of assistance and incentives for these mitigation efforts.

The first CRMP retrofit incentive program, *Earthquake Brace + Bolt: Funds to Strengthen Your Foundation* (EBB), was launched by the new CEA mitigation department as a pilot project in September 2013. The EBB provides up to $3,000 to homeowners who complete a qualifying retrofit of their houses. Registration for the 2019 program, which closed on November 13th, set a record with 8,688 homeowners applying – an increase of 15% over the 2018 registration. As of March 2019, the EBB program has provided over 7,600 grants for code-compliant seismic retrofits of crawlspaces in specific high seismic-hazard areas of California.

CEA Brace and Bolt Program

In addition to CRMP and EBB, the CEA mitigation department manages the CEA brace and bolt (CEA BB) program. CEA's pilot program, authorized by the CEA board in 2017, granted each selected CEA policyholder up to $3,000 toward a retrofit, encouraging them to strengthen their CEA-insured older houses in CEA-identified high-seismic-activity areas. Just under 100 policyholder houses were retrofitted in the pilot program. This CEA BB pilot program was completed in the fall of 2018.

In February 2019, CEA invited 4,000 CEA policyholders with three or more years tenure to register for a seismic retrofit incentive program similar to EBB. The new program encourages retrofit-program participation by CEA policyholders who may experience upward premium impacts of 15 percent or more on account of the CEA's recent rate-and-form filing (RFF), now approved by the Department of Insurance to take effect starting July 1, 2019. More than 14,000 qualifying policyholders will be invited into the CEA BB program over a period of one year.

Basic CEA-EBB program eligibility criteria will continue, and the program will be available to CEA policyholders who (1) own a pre-1940 house that is within established criteria for a code-compliant EBB retrofit, (2) live in a ZIP Code where there will be an RFF-caused premium increase of 15 percent or greater, and (3) have insured their house with CEA for at least three continuous years.

Future Retrofit Incentive Funding

While over 7,500 retrofits is a tremendous accomplishment, the CEA estimates that more than 1 million houses in California's high-seismic-hazard areas would qualify for an EBB retrofit. The need far exceeds presently available funding. However, because more funding means more incentive payments for more homeowners, CRMP continues to look beyond present funding sources to find additional EBB funding, including available FEMA Hazard Mitigation Grant Program (HMGP) funds. The primary source of funding has been the CEA Earthquake Loss Mitigation Fund, augmented two years in a row with $3 million from the California general fund. Recently, CEA completed the retrofit of just under 100 homes in Napa using FEMA HMGP grants and has been awarded a new $3 million FEMA HMGP grant which will partially fund the 2019 EBB program. CEA is also awaiting a determination from Cal OES on FEMA-funding through 13 additional HMGP-grant applications.

A Bold Future

California and the CEA, born of the Northridge earthquake, have benefited from 25 years without a large, damaging earthquake. This has allowed the CEA to grow and prosper, offering better insurance and mitigation solutions to California residents. However, insurance take-up remains far below what is needed to protect Californians from catastrophe. The bold envisioned-future is one where earthquake loss is reduced through a well-funded mitigation program, and personal finances are protected by affordable catastrophe insurance.▪

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