

**CALIFORNIA EARTHQUAKE AUTHORITY  
GOVERNING BOARD MEETING  
MINUTES**

**Wednesday, April 8, 2015  
10:00 a.m.**

Location: California Governor's Office of Emergency Services (Cal OES)  
Media Room  
3650 Schriever Avenue  
Mather, California

Members of the Governing Board in attendance:

Mark Ghilarducci, designee of Governor Jerry Brown, Board Chair  
Grant Boyken, designee of State Treasurer Bill Lockyer  
Chris Shultz, designee of Insurance Commissioner Dave Jones

Members of the CEA Staff in attendance:

Glenn Pomeroy, Chief Executive Officer  
Dawn Balzarano, Counsel  
Marc Keller, Governing Board Liaison  
Janiele Maffei, Chief Mitigation Officer  
Danny Marshall, General Counsel  
Chris Nance, Chief Communications Officer  
Bruce Patton, Director of Policy, Research and Special Projects  
Bob Stewart, Chief Operations Officer

Also present:

Hugh Cowan, Ph.D., New Zealand Earthquake Commission  
Ralph Flum, Aon Benfield

- 1. The meeting was called to order at 10:04 a.m. A quorum was achieved.**
- 2. Chief Executive Officer Glenn Pomeroy will introduce to the CEA Governing Board Dr. Hugh Cowan, General Manager, Reinsurance, Research, and Education – New Zealand Earthquake Commission (EQC).**

Chief Executive Officer Glenn Pomeroy stated the earthquakes that struck Christchurch, New Zealand, in 2010 and 2011 presented extraordinary challenges. Dr. Hugh Cowan, General Manager of Reinsurance, Research, and Education of the New Zealand Earthquake Commission (EQC), in 2010 hosted CEA staff for a week for an in-depth look at how the EQC responded to the series of earthquakes that

produced massive damage. Dr. Cowan was asked to provide insight on the challenges New Zealand has faced and what has been done to overcome them.

Dr. Cowan stated it had been 70 years since the previous significant loss in an urban center in New Zealand, so the community was not attuned to the complexities that would arise from a major urban earthquake. Over a 14-month period, beginning September 2010, there have been more than 10,000 aftershocks, some of which were large enough to produce significant additional damage. The losses the CEA team witnessed in November 2010 were compounded and exceeded by the earthquakes that followed in 2011. He thanked the many international teams, including the Los Angeles Fire Department, for their support.

Dr. Cowan stated New Zealand is in the fifth year of the reconstruction phase, a period of recovery that he estimated will take the better part of 15 to 20 years to complete. He shared images from the earthquakes and the post-loss environment. He provided an overview of the earthquake experience, the role of the EQC and other private and public sector organizations in the recovery process, and the lessons learned that will result in legislative or commercial reforms to prepare the community for the next event.

September 2010 Earthquake:

- Happened in the early hours of the morning
- No loss of life
- Extensive property damage
- Most catastrophic experience of liquefaction worldwide since the 1964 Nagato earthquake in Japan
- Large volumes of sediment came to the surface. Structures built on those soils were badly affected.

February 2011 Earthquake:

- Happened during the middle of a work day; centered almost directly beneath the city.
- 186 lives were lost, most in the collapse of two commercial buildings.
- Extensive property damage, including historical 19th Century structures from the early settlers.
- Liquefaction, spreading, and settlement caused large sections of soft soil to spread towards waterways or down-slope, literally tearing homes apart.
- Ground motion was amplified on homes built on rock; contents of homes and many of the roofs of the homes were lifted off the foundations.
- Acceleration exceeded gravity by a factor of 2 in some cases.
- Many buildings that did not collapse have subsequently been brought down due to posing a significant risk to life.

Unique Challenges and Compounding Factors:

- Extensive non-structural damage compounded the difficulties of getting in and out of the business district and forced businesses to close.
- Modern buildings that did not collapse sustained damage that threatened the surrounding commercial district.
- Many businesses did not suffer material loss directly as a result of the earthquake but as a result of damage to neighboring structures, where entire blocks remained off-limits for months.
- Large commercial buildings that were repairable and achieved what engineers term "good performance" ultimately were demolished and rebuilt rather than repaired due to the fear of the community to reoccupy multistory buildings and because all the surrounding buildings in the vicinity had been removed.
- Demolition compounded the disruption to civic life in a community that was struggling to get back on its feet.
- More than 1,500 substantial buildings have been brought down in the central business district and, even five years later, there are still a number of buildings that have yet to be demolished.
- The ground performance where the water table was close to the surface was a unique if not defining feature of these events.
- Extensive damage occurred to underground pipes, waste water, bridge structures, wharf structures, levees, and railways.

The Role of the EQC in the Recovery Process:

- The EQC is a first-loss insurer providing a deductible for the private market that comes in on top, providing affordable top-up cover to ensure that homeowners are effectively insured for natural perils.
- There is a 90 percent market penetration in New Zealand, while California experiences 10 percent.
- Non-residential property, commercial property, and infrastructure are entirely with the private market.
- Economic losses are estimated at around \$30 billion.
- The EQC has 750,000 claims from 170,000 households, whereas previously there had not been more than 6,000 to 10,000 claims per event.
- The EQC's share of the liability is \$8 billion.
  - Historically, insurance claims were cash settled.
  - The government directed the EQC to organize a managed repair program to ensure that the reconstruction capital would be deployed to reinstate

damaged buildings to avoid fueling inflation and to provide certainty of timely repairs.

- Part of the EQC's managed repair program included scaled up contractor resources to expedite emergency repairs to avoid a mass evacuation.
- More than 50,000 emergency repairs were carried out over the following year, a period during which the earth continued to move.

Lessons Learned to Prepare the Community for the Next Event:

- Plan for and deliver an adaptive response.
- Leverage a range of data or information in order to inform the recovery by facilitating research and education during non-event periods to build understanding of the risks faced.
  - Build relationships with the science and engineering communities to make use of modern technologies to acquire an evidence-based understanding of losses.
  - Build and maintain public awareness, particularly during non-event periods, with apps and a Web presence to reach out to communities in new ways to allow for broader conversations to provide a more transparent understanding of risk and how risk-transfer is managed.
- Make bold investments to build overall societal readiness and awareness of geological perils, such as GeoNet, an integrated national hazard monitoring system that monitors earth deformation and seismic vibrations.
  - The EQC gained an understanding of how the buildings and ground responded in the earthquakes that went beyond an academic or scientific interest in earthquake phenomena, but increased the knowledge of how to measure the performance of buildings to improve future design, construction practices, and insurance liability assessment.
  - The reinsurance markets made a unique and vital contribution to New Zealand's recovery. Dr. Cowan stated the continued access to those markets reflects the confidence that they have in the EQC's approach to characterizing the risks and the transparency of how losses are allocated.
- Continue the discussion about how to manage tradeoffs in the treatment of risk and to have a more holistic, practical, and honest conversation in the community about how to manage this exposure over a long period of time.

Governing Board Member Questions and Comments:

Chair Ghilarducci asked about the population that was affected by the earthquake. Dr. Cowan answered around 300,000 to 350,000 were affected.

Chair Ghilarducci asked what the percentage of commercial loss was based on. Dr. Cowan stated the treasury and central bank have reported a 15 to 20 percent GDP loss measure. The central business district was affected in two ways: material losses

and loss of economic livelihood arising from the fact that the entire central business district remained locked down for more than seven months, due to the fear of aftershocks triggering further collapses of damaged buildings.

Chair Ghilarducci asked how temporary housing issues were handled. Dr. Cowan stated the managed repair program had already been organized at the time of the February 2011 earthquake. That work force was deployed for emergency repairs and lowered the need for temporary housing.

Chair Ghilarducci asked if the government was primarily responsible. Dr. Cowan stated there were many recovery agents involved, both governmental and non-governmental. There was an extensive network of welfare coordination services.

Chair Ghilarducci asked if New Zealand has an earthquake early warning program or if they are considering implementation of one. Dr. Cowan stated the GeoNet monitoring system provides the underpinnings for early warning. He cautioned that earthquake early warning is only effective if the earthquake source is at some distance from the communities at risk.

Board Member Boyken asked what steps the EQC took to ensure they were financially sound. Dr. Cowan stated the EQC is technically insolvent. Its fund is fully allocated to the Canterbury losses with a shortfall of NZ\$0.5 billion, for which the available reinsurance will not be sufficient. However, this is not an issue, as the EQC has a government guarantee.

Board Member Boyken asked about the EQC's high take-up rate. Dr. Cowan stated a home is a major asset for most people in New Zealand. The EQC provides cover in the form of a flat-rated levy on private policies. Future insurability and the affordability of insurance is an objective in terms of the political economy.

Mr. Pomeroy asked how the cost for the compulsory earthquake protection has changed since the Christchurch event. Dr. Cowan stated it has nearly tripled, increasing from NZ\$70 to NZ\$200 per year.

Mr. Pomeroy stated 40 percent of what the CEA's policyholders pay goes toward reinsurance. He asked about the benefits of a blended approach. Dr. Cowan stated it is a tradeoff. Ultimately, the EQC aims to retain risk in order to optimize the cost of transferring some fraction of it. The EQC has tried to buy as much reinsurance protection as possible. He anticipated the tradeoffs between fund size and reinsurance protection will be a feature for future review.

Board Member Shultz asked if there are areas in New Zealand with zero risk factor. Dr. Cowan stated no community in New Zealand has zero risk exposure. Some have a greater risk than others, but the value of the scheme, given it is first-loss by its very nature, is that it mitigates against adverse selection.

CEA Chief Communications Officer Nance asked, if the EQC had the chance to change it, how communication strategies and techniques for preparations prior to a big event would differ. Dr. Cowan stated they would be very different. The EQC would have identified its customers and have made better arrangements for the coordination of the response with the private market.

CEA Chief Mitigation Officer Maffei stated data is key. She asked if the EQC has any plans for its data. Dr. Cowan stated the EQC is sharing that data with research institutions, reinsurance companies, and modeling entities.

CEA General Counsel Marshall asked how New Zealand's legal system and the actions of the various participants in the recovery influenced the Christchurch recovery and how the legal system may be changed in the future. Dr. Cowan stated a number of reviews are underway with regard to the performance of buildings due to the inquiries that followed the commercial building collapses and the implications for mitigation practices under the building act. Changes in the communities should optimize or improve the evidence base for legal determination. The EQC's experiences with courts have been positive.

Board Member Shultz asked how many people carry private policies on top of the EQC cover. Dr. Cowan stated they all do. Private carriers offer natural disaster protection in excess of the EQC protection.

CEA Counsel Balzarano asked if non-residential buildings had sufficient coverage in the aftermath of the earthquakes and if the government became involved in the demolition or purchase of properties that were insufficiently repaired. Dr. Cowan stated the EQC has been confined to residential property since the early 1990s. He stated he was not aware of any significant withdrawal of terms or coverage. It has given a new respectability to mitigation in some cases, because people can consider the tradeoffs in the cost of rising premiums versus the cost of investing in strengthening work or possibly moving to another site.

**Public Comment:**

Ralph Flum, of Aon Benfield, asked for clarification that a homeowner will have earthquake coverage up to the limit purchased in all instances. Dr. Cowan stated a typical homeowner will have the EQC cover up to the EQC limit and additional cover through the private market. At the time of the Canterbury losses, most homeowners enjoyed open-ended replacement policies. The New Zealand insurance market has since moved almost all policyholders to sum-insured policies.

Mr. Flum asked what happened to the cost of the earthquake coverage in the private sector after the losses. Dr. Cowan stated it went up, as did the EQC's, reflecting the increase in the wholesale market.

Mr. Pomeroy and Chair Ghilarducci thanked Dr. Cowan for his presentation and stated they looked forward to a continued partnership.

**3. Public comment on items that do not appear on this agenda and public requests that those matters be placed on a future agenda.**

There was no public comment.

**4. Adjournment.**

There being no further business, the meeting was adjourned at 11:39 p.m.