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Testimony in support of Assembly Bill No. 57
before the Nevada Assembly
Government Affairs Committee
The Honorable Mark Manendo, Chair
19 February 2003

My name is Jonathan G. Price. I am the Nevada State Geologist and Director of the Nevada Bureau of Mines and Geology, a research and public service unit of the University and Community College System of Nevada, administered as a statewide program at the University of Nevada, Reno. I am also the Secretary of the Nevada Earthquake Safety Council. Thank you for this opportunity to testify on what I believe is the most important step that the State of Nevada can take toward reducing loss of lives, property, and business activity resulting from inevitable, future earthquakes.

The Nevada Earthquake Safety Council is the advisor to Nevada's earthquake-risk reduction program, which is a three-pronged program of the Nevada Division of Emergency Management, the Nevada Bureau of Mines and Geology, and the Nevada Seismological Laboratory. The Council facilitates public input, develops consensus positions about earthquake issues within the public and private sectors, and is the public advisory body for State earthquake-safety policy. The board of directors of the Council consists of representatives from businesses and industry; community organizations, state and local government; the Legislature; UNR and UNLV; K-12 education; technical disciplines of engineering, seismology, and geology; and building officials. At its November 15, 2002, meeting, the board of directors of the Council unanimously voted to endorse the language in this legislation.

Please allow me to say a few words about the need for this legislation.

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DATE: 2/19/03 ROOM: 3/43 EXHIBIT D
SUBMITTED BY: Jonathan G. Price

The Federal Emergency Management Agency (FEMA), in its 2001 Report Number 366, estimated the annualized earthquake loss for the state of Nevada to be $55 million per year, of which $28 million is in the Las Vegas metropolitan area and $17.8 million is in the Reno metropolitan area. These figures include the repair costs, inventory loss, and cost of business interruption expected to be sustained by the residential and commercial building sectors, but they do not include indirect economic losses or the social costs of death and injuries. Also excluded are the direct and indirect losses suffered by the industrial, manufacturing, transportation and utility sectors. Total losses are therefore likely to much higher than the numbers I have just given, and I note that the Earthquake Engineering Research Institute recently estimated these losses to be two to three times those given by FEMA. These losses take into account the number, type, and occupancy of those buildings at risk and the frequency of earthquakes. A single, large urban earthquake in Nevada could cause billions of dollars in damage.

Nevada is the third most hazardous state in the Nation in terms of the frequency of major, magnitude 7 or greater, earthquakes. Only Alaska and California have major earthquakes more frequently than Nevada. Nevada ranks fifth in terms of annualized earthquake loss.

A proven strategy for securing our future against major earthquakes is the adoption and enforcement of building codes with stringent earthquake provisions. The primary objective of modern earthquake codes is life safety, and the low loss of life and number of injured persons in recent earthquakes in California and Washington demonstrates the effectiveness of this strategy. But each new earthquake teaches us something we did not know about earthquakes and their destructive power. Researchers and engineers are constantly discovering new and better ways to design our homes, schools, hospitals, office buildings, bridges, and industrial plants, to not only protect lives but also survive these potentially catastrophic events with acceptable levels of social and economic loss. As a result, building codes are frequently being revised and improved as new knowledge becomes available.

The International Building Code adopted by the International Code Council is a state-of-the-art consensus document that incorporates the most recent thinking in earthquake-resistant design and construction. It is based on recommendations from the nation's leading experts in the field of earthquake hazards.

Public preparedness and safety during an earthquake are prime responsibilities of the State. It is similar to preparing for any major disaster except that earthquakes

occur without warning and deserve an extra measure of caution as a consequence. Adoption of the International Building Code is a critical and urgent step towards meeting this goal.

In addition, we also need to fill the gaps not covered by the International Building Code. One of these is in the area of geotechnical hazards that include ground failure in an earthquake due to fault rupturing and/or liquefaction. For this reason, I also strongly support the adoption of guidelines for the investigation of these particular geotechnical and geological hazards.

Anticipating this need, the Nevada Earthquake Safety Council has been working with the civil, geotechnical, and geological engineering community in southern and northern Nevada to define best practices regarding these particular hazards. The final product of this study was a set of recommended guidelines for evaluating potential surface rupture and land subsidence hazards in Nevada (20 February 1998), and for evaluating liquefaction hazards in Nevada (February 18, 2000). Both reports are available on the Council's Web site (www.nbmg.unr.edu/nesc). These are the guidelines that we expect would be adopted by the Chief of the Division of Emergency Management under Section 3 of the bill.

Thank you.