FOREWORD

Since the devastating Hyogoken-Nambu (Kobe) earthquake in 1995, various efforts have been directed toward the mitigation of future earthquake disasters. Earthquake hazard evaluation, seismic capacity evaluation and rehabilitation of vulnerable buildings, development of post-earthquake damage evaluation techniques can be major examples of such efforts.

The Central Disaster Management Council re-investigated the seismic center area of the Tokai earthquake, which is predicted to occur in the near future from the seismological point of view, and concluded that the region that would be affected by the earthquake was expanded to the west. Other investigations pointed out that the probability of two major earthquakes, Tonankai and Nankai earthquakes expected to occur in the Nankai trough, would be 40 to 50 % within next 30 years. A nationwide survey recently made by the Cabinet Office of Japanese Government indicated, however, that only 10 % of vulnerable buildings have been rehabilitated, and a large number of vulnerable buildings are still around us. The worst case scenario pointed out that Tokai, Tonankai, and Nankai earthquakes might occur along the Nankai trough for several hundred kilometers simultaneously as was the case in 1707, and that they would cause extensive and serious damage in areas much wider than those realized for Kobe.

Comprehensive countermeasures covering pre- to post-event actions are most essential and urgently needed to mitigate catastrophic consequences. Although vulnerability assessment standards and rehabilitation guidelines for pre- and post-event structures have been developed and practically applied to existing and damaged structures to date, they still leave issues that need to be verified through more data, evidence and discussions. It is our great and urgent task to enhance disaster preparedness potentials through up-to-date knowledge, experiences, and their implementation. We cannot afford to wait for the next big one.

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