FOREWORD

Nine years have passed since the devastating Kobe earthquake in 1995. Meanwhile, the design seismic motions in Japan have been raised remarkably; for example, up to 600 or 800 Gals at the ground surface in designing railway facilities. In addition, many of the Japanese seismic design codes are going to be modified into a new framework of performance-based designs in the near future.

In view of the above, a variety of design methods have been proposed in Japan to evaluate the residual displacement or deformation of structures under extremely high earthquake loads. Geotechnical structures, such as embankments and retaining walls, are not the exceptions. It seems, however, that verification of the general applicability of the newly proposed methods in the geotechnical practice is rather a difficult task, since their accuracy may be masked by the wide variation of soil properties in nature.

One of the possible solutions for the above task would be to tune up the parameters to be used in the respective method based on the past case histories. In order to make quantitative verification, it is required that the case histories should be well-documented ones, hopefully including relevant in-situ and laboratory test results. On the other hand, even if the number of available data is limited, a group of case histories can provide us with useful information on different performances of structures under various conditions. This may be the case with not only geotechnical issues but also those in other fields.

In this volume and previous volumes of ERS bulletins, as well as to report the latest research outcomes, significant efforts have been made to record the results from worldwide damage surveys that were conducted after several large earthquakes, including the recent ones in Iran, Peru, Taiwan and Japan. I believe it is indispensably important to share lessons learned from severe experiences among different countries, organizations and individuals. I do hope these case histories be referred to by the readers in an effective manner.

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