
Response

Massachusetts Earthquake Design Codes by S.A. Alsup & K.E. Franz, Vol. 4, No. 1, Spring 1989, pp. 79-82

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William Weiler's remarks on "Massachusetts Earthquake Design Codes" are well taken, and the Seismic Design Advisory Committee (SDAC) of the Boston Society of Civil Engineers Section/ASCE is to be commended for its efforts in attempting to make rational the 'irrational' seismicity of the Northeastern United States. A corrected version of the article that incorporates the 1988 changes to the Massachusetts Earthquake Design Code has been prepared for publication in another journal with reference to the article under discussion here. In the authors' defense, however, the following comments should be considered:

1. The article was part of a larger work, "Geology of the City of Boston, Massachusetts," from which articles were selected for inclusion in *Civil Engineering Practice*. The authors were requested by the

editors of that work to summarize the *existing* codes (1980) the year following the SDAC 1983 proposed changes to the code. This summary was prepared and submitted, and due to a series of unusual coincidences, the authors' ability to review or correct the inadequacies was limited prior to the publication of the referenced article.

2. The authors were requested by the editors of the larger work to summarize the codes as they *existed* (1980 version); specifically, they were requested not to prepare any running commentary or critique of the reasonableness, adequacy or appropriateness of the codes. The article could have, and perhaps should have, included a strong comment referencing the 1983 SDAC recommendations. These recommendations, however, were not codified at the time that the article was submitted, but were only codified some five years after they were completed.

As a general comment, the new (1988) code

is clearly an improvement over the old, but it is also somewhat labyrinthine and arbitrary. For example, in Section 720.0 (Bearing Pressure on Foundation Materials), a registered professional engineer is required to evaluate foundation conditions. Should not the registered professional be required to have specific training and/or experience in the evaluation of foundation conditions? Similarly, if professional competence is required, is the guidance provided by Appendix X and Table 720 of material use? A more definitive identification of units might also improve the utility of this particular code (*i.e.*, is 'g' in Figure 716.2 in metric or British units?).

After more than 15 years in seismological research coupled with more than 10 years of association with soils and foundation engineers, I fully recognize the frustrations of trying to bring some engineering order to the chaos of potential seismic effects in the Northeastern United States. I do, however, find a number of inconsistencies in Weiler's Discussion of Barosh's article on earthquake hazards in the Boston area ("The Hazard From Earthquakes in the Boston Area," Vol. 4, No. 1, Spring 1989, pp. 65-78). The 'choice' of a 0.5 m_b unit and 1 Modified Mercalli Intensity unit increase above a 'study' earthquake, and assign-

ing the epicenter to a place that had an earthquake does not identify a procedure that is 'rational,' but one that is an arbitrary adjustment for safety factor instead. Similarly, the Massachusetts Civil Defense Agency (MCDA) intensity equation (1) on page 83 of Weiler's discussion does not adequately predict intensities according to his enumerated paragraph 2 (p. 84 of this issue). It may also well be that Barosh, in the nearly 10-year period since participating as a committee member in the MCDA study, has formed his own scientific opinion on the basis of his understanding of the subject. He has the qualifications and the right to express such understanding in published form without having to have a committee decision validate his opinion.

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