ASCE 61 UPDATES AND NEW ASCE GUIDELINES FOR SEISMIC DESIGN OF BULKHEADS

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ABSTRACT

ASCE 61, the Standard for Seismic Design of Piers and Wharves, has been widely used for marine structures since it was first published in 2014. The next edition is scheduled for 2019 and this presentation will summarize some of the major changes to the Standard.

One major change is that ASCE 61-14 was limited to pile-supported piers and wharves while ASCE 61-19 will also include bulkheads. The Standard will incorporate the work of the ASCE/COPRI Task Committee for Seismic Design of Bulkheads that is separately developing practice-oriented guidelines for force- and performance-based seismic analysis and design of planar flexible bulkheads, including lateral force resisting systems. The guidelines will present recommended design procedures that incorporate recent advances in pertinent topics such as specification of seismic ground motions for earth retention systems, seismic lateral earth pressure estimation, soil-structure interaction for flexible structures, and soil liquefaction/lateral spreading issues. The performance-based focus of the guidelines will address allowable stresses, bulkhead deflection and the associated impact on retained infrastructure for varying damage states. Example problems will be presented demonstrating the application of the recommendations. These guidelines are specific to the marine engineering industry where the bulkhead may constitute a quay/dock or part of pile-supported pier or wharf system in the form of a cut-off wall or abutment.

This presentation will summarize major updates to ASCE 61-19 along with new guidelines for seismic design of bulkheads, such as:

- Proposed major changes in ASCE 61-19
- ASCE Guidelines for Seismic Design of Bulkheads
- Performance-based design approach for bulkheads
- Overview of example problems

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