



Large Scale Geotechnical Laminar Box Experimental Tests and Seismic Site Response Benchmarking  
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## **Introduction**

Numerical tools are used to evaluate the impact that earthquake ground motions have on nuclear facilities. These analysis tools are used to design and perform risk calculations for nuclear facilities. To have confidence in the predictive capability of these numerical tools it is important to verify and validate them. To verify and validate numerical tools the user must understand what physics is being used to represent the problem (i.e. constitutive models used to represent the soil and structure), the numerical solver approach used (i.e. finite element), what data already exists that could be used to validate the tools, and what data is needed for validation.

Large scale geotechnical laminar box experimental tests were performed to determine the behaviour of soil during cyclic shaking at a large scale. Results from the tests were examined to determine the soil response during testing. The results were compared with numerical models to start benchmarking and validating the capability of these models to produce reasonable results.