



Seismic Response of Coupled Structure, Equipment and Piping System with and without Base Isolation - An Experiment

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Abstract

Generally, when structures are subjected to an Earthquake, the response gets amplified from ground to higher floor levels. This is a function of ground motion frequency amplitude characteristics, frequency and damping characteristics of structure. To make the response of structure independent of its frequency and damping, seismic base isolation techniques are adopted. It makes the structure isolated from ground motion and results in low seismic responses such as accelerations and forces. However, there will be large displacement with respect to the ground. This concept will also help to reduce seismic demand on floor mounted equipment and piping systems. Eventually helps the utility to standardize the seismic design of Structure and floor mounted Equipment and Systems. In addition, the data generated will be useful for the designer to validate the design. Tests were performed on coupled structure equipment (vessel) and piping systems. This paper presents details of experiments carried out, observations made on structure, vessel and piping responses.

Keywords: Attenuation, Regression, GMPE, Amplitude