Non-Linear Dynamic analysis of Multi story Building

Abstract

The important objective of earthquake engineers is to design and build a structure in such a way that damage to the structure and its structural component during the earthquake is minimize. This report aims towards the dynamic analysis of a multistorey RCC building with symmetrical configuration. For the analysis purpose model of ten storey RCC with symmetrical floor plan is consider. The analysis is by carried by using finite element based software SAP 2000. Various response parameters such as lateral force, base shear , story drift , story shear can be determined. For dynamic analysis time history method or response spectra method can be used .Time-history analysis is a step-by-step analysis of the dynamical response of a structure to a specified loading that may vary with time. The analysis may be linear or nonlinear. Dynamic analysis can be performed for symmetrical as well as unsymmetrical building. Dynamic analysis can be in the form of nonlinear dynamic time history analysis.” “In this seminar report, a nonlinear time history analysis is performed on a ten storey RCC building frame considering time history of el centro earthquake 1940 using Etabs The main parameters of the seismic analysis of structures are load carrying capacity, ductility, stiffness, damping and mass. The various response parameters like base shear, storey drift, storey displacements etc are calculated. The storey drift calculated is compared with the minimum requirement of storey drift as per IS 1893:2002. Index Terms—Base Shear, Finite Element, Storey Drift, Time history analysis