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Case Report

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Effect of Seismotectonic And Engineering-Geology on Seismic Danger of Territories In India

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Introduction

Seismic hazard map seen in territory and adjacent areas has been prepared employing a deterministic supported the computation of synthetic seismograms. Data set consists of structural models, seismogenic zones, focal mechanisms and earthquake catalogues, using realistic strong ground motion modelling with the knowledge of the physical process of earthquake generation, the extent of seismicity and wave propagation in anelastic media. Prehistoric on earthquakes are often obtained through the utilization of palaeoseismic techniques. the prevailing procedures for assessing different natural hazards are essentially similar. the primary step is usually the definition of the source model in terms of the source location and therefore the frequency and size of probably damaging events; the second step relates to the propagation of disturbances from the source; and the third step, involves the event of an exposure model for a site or for a neighborhood. it's obvious that accuracy of assessment depends on the number and quality of input file. There are too many samples of an uncritical use of published data for hazard mapping, all of which illustrate the necessity for a careful revision and unification of the input information. Processing heterogeneous data leads only to misleading result.

Description

Seismic Hazard Microzonation process are classified in different processes. The first process is source characterization and generation of ground motion at base rock at different sites using Probabilistic or Deterministic Seismic Hazard Analysis. Second process, these strong ground motions are used as input motion and supported soil characteristics; site response study is administered. within the present study Probabilistic Seismic Hazard Analysis been adopted for first part of the study and a brief on methodology, analysis and generation of strong ground motion and the parameters, Soil play very important role in accentuation of seismic hazard. Differing types of soil respond differently when subjected to the bottom motion and thus understanding of subsurface soil variation, static and dynamic properties of soil column is extremely important [1]

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Further, this study is on 1:10000 scale and thus subsoil variability in very 100m need be as curtained. this needs extensive geotechnical and geophysical investigations at many sites for evaluation of index and dynamic properties of soil [2]

The objective of Seismic Hazard Microzonation

- Peak frequency of soil column above bedrock
- Peak Amplification Factor/ratio of soil column above bedrock
- Peak Ground Acceleration (PGA) at surface iv for different periods of exceedance and damping
- Amplification factor of soil column
- Spectral acceleration at different periods
- Site specific response spectra and therefore a combination of experimental and numerical techniques have been adopted.

Earthquake induced hazard, particularly liquefaction and land slide also are of concern for structural safety. due to the sort of soil, flood plain of river Yamuna in north of Delhi, its migration leaving soft sediments, paleochannels and abandoned channels, liquefaction study become vital component of Seismic Microzonation [3].

Conclusion

The seismic hazard analysis of NCT Delhi is predicated on a state-of-the-art Probabilistic Seismic Hazard Analysis (PSHA) using different source models (Line and Aerial). Earthquake sources and parameters have been considered for the area covered und er 350 km radius from Delhi. Selections of models and attenuation relations etc have been made after elaborate discussion among the experts. On the basis of P SHA, Spectral Acceleration maps and site-specific Uniform Hazard Response Spectra (UHRS). The Uniform Hazard Response Spectra (UHRS) for different probability of exceedance are used for generation of spectrum compatible acceleration time histories.

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