ANALISIS *SITE SPECIFIC RESPONSE SPECTRA* GEMPA WILAYAH TANGERANG

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INTISARI

Tangerang merupakan salah satu wilayah di Provinsi Banten yang memiliki potensi gempa bumi yang cukup tinggi, karena terletak pada wilayah pertemuan tiga buah lempeng tektonik berukuran benua yang secara terus menerus bergerak secara aktif yaitu Indo – Australia, Pasifik, dan Eurasia. Analisis *Site Specific Response Spectra* Gempa penting dilakukan sebagai langkah awal untuk perencanaan struktur tahan gempa. Tahap awal dalam Analisis *Site Specific Response Spectra* Gempa adalah melakukan Analisis *Seismic Hazard* Gempa dengan menggunakan metode *Probabilistic Seismic Hazard Analysis* (PSHA) dan penentuan percepatan gempa dipermukaan melalui analisis perambatan gelombang 1 dimensi dari batuan dasar ke permukaan tanah menggunakan bantuan *Software Nonlinear Earthquake Site Response Analysis* (NERA). Data kejadian gempa yang digunakan dalam analisis ini diambil dari sumber data gempa USGS tahun 1917 – 2017. Penelitian ini juga menggunakan 19 titik *sample* tanah berdasarkan data N – SPT.

Berdasarkan hasil analisis dapat disimpulkan bahwa karakteristik tanah untuk wilayah Tangerang termasuk kedalam kategori kelas tanah sedang. Nilai percepatan batuan dasar berdasarkan hasil Analisis *Seismic Hazard* Gempa untuk wilayah Tangerang diperoleh rentang nilai antara 0,11g – 0,21g, sedangkan nilai percepatan gempa dipermukaan untuk wilayah Tangerang diperoleh rentang nilai antara 0,18g – 0,38g dan termasuk kedalam zona wilayah gempa berwarna kuning berdasarkan Peta Gempa Indonesia atau SNI gempa 1726 : 2012.

Kata Kunci : Kecepatan Gelombang Geser, NERA, SPT, *Probabilistic Seismic Hazard Analysis* (PSHA).

ANALYSIS OF EARTHQUAKE *SITE SPECIFIC RESPONSE SPECTRAIN* TANGERANG AREA

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ABSTRACT

Tangerang is one of the areas in Banten Province that has a high earthquake potential because it is located in the area of the meeting of three continental-sized tectonic plates that are continuously moving actively. The three active plates are Indo - Australia, Pacific, and Eurasia. Analysis of Earthquake Site Specific Response Spectrain is important as a first step for planning earthquake-resistant structures. The initial stage in the Analysis of Earthquake Site Specific Response Spectrain was to conduct Seismic Hazard Analysis using the Probabilistic Seismic Hazard Analysis (PSHA) method and the determination of earthquake acceleration on the surface through the analysis of 1 – dimensional wave propagation from bedrock to ground surface using the help Software of Nonlinear Earthquake Site Response Analysis (NERA). The earthquake event data used in this analysis was taken from the USGS earthquake data source in 1917 - 2017. The study also used 19 soil sample points based on N-SPT data.

Based on the results of the analysis it can be concluded that the characteristics of the land for the Tangerang area included the category of medium land class. Base rock acceleration values based on the results of Seismic Hazard Analysis for the Tangerang area obtained a range of values between 0.11g - 0.21g, while the value of earthquake acceleration on the surface for the Tangerang area was obtained in the range of 0.18g - 0.38g and included the yellow zone. based on the Indonesian Earthquake Map or SNI 1726: 2012 earthquake.

Keywords: *Shear Wave Velocity, NERA, SPT, Probabilistic Seismic Hazard Analysis (PSHA).*