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### “Reliability Study of Ombilin Steam Power Plant Structural Concrete Building in West Sumatera as an Earthquake Area

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#### Abstract

By concerning a high intensity of earthquakes activity for recent years, reliability of existing power plant needs to be considered. It has to be checked to assure the performance during life time and to prevent possibility of damage.

Evaluation of earthquake used Seismic Hazard Analysis based on probability method. The data is obtained from USGS (United Stated Geological Survey) in radius 500 km from epicenter. As an output, ground acceleration (PGA) value will be informed in 3 schemes; PGA design estimation, PGA maximum, probability of PGA future prediction. As a comparison, basic design data referenced to code (SNI-1726-2002). Then, the recently condition and uncertainty probability of earthquake for further years can be determined.

Investigations for concrete material are identified by depth of crack (Ultrasonic Pulse Velocity test - UPV) and concrete quality (Schmidt hammer and UPV test). It can showed level of damage. Finally, analysis of earthquake hazard and material can approximate the reliability of structural against future hazard.