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considering soil-structure interaction EFFECTS

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**SEISMIC ISOLATION OF BUILDINGS FOR POWER STATIONS CONSIDERING SOIL-STRUCTURE INTERACTION EFFECTS****Arturo Tena-Colunga<sup>1</sup>, Luis Eduardo Pérez-Rocha<sup>2</sup>, Javier Avilés<sup>3</sup> and Cuauhtémoc Cordero-Macías<sup>4</sup>**

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**ABSTRACT**

Nowadays, the power industry in Mexico is building encapsulated power stations, because they are a more efficient, safer and cheaper technology for power transformation, and also requires of smaller spaces. Encapsulated power stations have been already built in cities of Mexico where the seismic risk and hazard is negligible. Given all the advantages described above, Comisión Federal de Electricidad (CFE), the Mexican power company, is studying the possibility to build this type of stations in the Valley of Mexico, where the earthquake risk and hazard are high. Encapsulated power stations are composed of a series of high diameter pressured steel pipes that contains a toxic gas as an insulation media for the electric cables that host inside. Therefore, it is required that for severe earthquake shaking, encapsulated power station remain fully operational and that there will be no risk of a gas leaks, particularly in the soft soil sites of the Valley of Mexico. The use of base isolation in soft soils as those found in the lakebed region of Mexico City is atypical and must be seriously evaluated. In soft soils, there is a higher risk of dynamic instability of base isolated structures for severe earthquake shaking due to the likeliness of resonant response with the ground, global rocking effects or sudden differential settlements of the ground. Research studies devoted to assess the feasibility of employing pendular isolation systems for the benchmark architectural model of SF6 power stations for six soft soil sites in the Valley of Mexico are

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