Safety, earthquakes and Pakistan's electrical power system

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Abstract

The electrical power sector encompasses distribution companies, the transmission companies and generation companies. All these entities are required to adopt or adapt the safety standards and norms for installation, operation and maintenance. The workforce of these entities particularly the live-line crew and linemen are at more risk. In Pakistan sometimes safety codes of foreign countries are used with or without adjustments to local conditions i.e. chemistry of atmosphere, geological, geographical hazards etc. (These safety manuals of different electric companies may not necessarily meet the indigenous requirements of our country and lack uniform basis with no legal status, therefore various accidents in the past were seen). Moreover, no comprehensive study has been done in Pakistan on seismic performance of electrical system and requires immediate attention as Pakistan is one of the highly seismic active region in the world with potential of large earthquakes. This paper will describe the minimum requirements for safeguarding electrical power systems against strong ground motions, proposing seismic qualification criteria for electrical equipment, to establish the resilience of electrical power system and quantification of functionality in regard to seismic resilience which is a new dimension in electrical power system engineering worldwide.