

SEISMIC HAZARD ASSESSMENT FOR THE ENERGY HEARTLAND OF GREECE BASED ON PALEOSEISMIC INDICATIONS.

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The majority of electric power in Greece is produced at its northwestern part, in western Macedonia area. It was considered a low seismicity area, but after the destructive 1995 ($M_s = 6.6$) Kozani - Grevena earthquake, more detailed research revealed evidence for paleoseismic activity in the broader area. Trenching in selected sites along the 1995 seismogenic fault showed that it has not been activated for 9,000 years. Older events though, produced amounts of vertical slip significantly larger than the recent one. Also, liquefaction structures, similar to the ones produced during the 1995 event, were observed in Pleistocene - Holocene deposits at several sites in the broader area, indicating recent seismic activity. Slumping of lacustrine sediments connected to faulting was also evident in many cases. Seismic hazard assessment for the power plants of the area, may be summarized as follows:

- a. Polyfyto hydroelectric power plant: The reservoir lake extends parallel to Servia normal fault, filling the basin formed between the main fault and an antithetic one. Geological and geomorphological evidence indicate that the fault was activated during Holocene. It didn't rupture during 1995 earthquake, so the accumulated stress may be a potential factor for increased local seismic hazard. Two more dams under construction in other sites along the same river are less susceptible to earthquake effects because of the lack of significant large faults.
- b. Ptolemais basin thermoelectric power plants: Several faults cross Ptolemais basin, some of which are in the close vicinity of power plants. Although some of the basin's marginal faults generally present morphotectonic and structural characteristics similar to active fault models, they are not close to power plants. In general, seismic hazard for these facilities must be considered low to moderate.