

**REFINEMENT OF BACKGROUND SEISMICITY WITHIN THE SITE LOCATION
OF THE POWER PLANT «SAKHALINSKAJA GRES-2»
(SAKHALIN ISLAND)**

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Abstract. We have reexamined background seismicity around the future power plant «Sakhalinskaja GRES-2», which will be located in the area of the Pojasok Isthmus (Tomari Borough, Sakhalin region, north of the village Il'inskii). We interpreted aerial photographs of the study area and performed land surveys as well. In total, we discovered five active faults, previously unknown, all of them close to but beyond the limits of the study area. We designed the response spectra for the recurrence periods of 500, 1000, and 5000 years and made the choice of accelerograms-analogues. We designed maps of detailed seismic zoning (DSZ) for the macroseismic intensity parameter (I_{MSK}) and for peak ground acceleration (PGA , g) at 5 % damping for the recurrence periods of 500, 1000, and 5000 years. Our estimations of I_{MSK} on the central site for the soils of the second category are lower compared with General Seismic Zoning Map (GSZ-97). The reductions found are 0.4 (for Map A), 1.0 (for Map B), and 0.3 (for Map C) points.

Keywords: Sakhalin Island, shallow seismicity, active faults, model of seismicity, probabilistic analysis, seismic hazard assessment, detailed seismic zoning.