

MiningSEE, Serbia: Good emergency response practice – dewatering plan of the plan of the flooded open cast mine Tamnava – West field

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The flooding of open cast mines Tamnava -West Field and Veliki Crljeni was a disaster caused by unprecedented floods in the Republic of Serbia in May 2014, and as such brings to the forefront a number of issues related to emergency response on open cast mines and in mining in general. A group of authors consisting of prof. Dr. Vladimir Pavlovic from the Surface Mining Center, prof. Dr. Dragan Ignjatovic, and Dr. Tomislav Subaranovic from the Faculty of Mining and Geology, University of Belgrade, and Ivan Jankovic, from the Ministry of Mining and Energy of the Republic of Serbia, have prepared a plan, i.e. a project involving the rehabilitation and dewatering of the flooded open cast mine Tamnava-West Field. All the necessary activities were foreseen, their scope and schedule aimed at ensuring safe rehabilitation and dewatering of the flooded open cast mine and continuation of its operations. As this practically implies the rescue of the entire Serbian power system, the following should be highlighted. Tamnava West Field is the largest producer of coal of the Kolubara Basin. Of the total 30.7 million tons of coal produced in 2013, this mine has produced record 14.6 million tonnes, which is 47% of total production of the Kolubara Basin. This production of coal was accompanied by 33 million cubic meters of overburden. Achieved production was realized with nine continuous systems, of which eight with bucket wheel excavators and one with a bucket chain excavator. In accordance with the defined coal production, not only in 2013, Tamnava-West Field is essential for electricity generation at the Nikola Tesla thermal power plants and the overall energy stability of Serbia. According to the authors, the strategic objectives of the project involve the preparation of an optimal rehabilitation plan of the open cast mine ensuring its reliable and stable operation, i.e. defining of the drainage schedule warranting stability of operating and final slopes, inside dump and equipment, open cast mine protection against surface waters, etc. Measures and programs prepared to implement the strategic objectives are: geodetic surveys program and preparation of surveying inputs, program of hydrodynamic simulation of the reservoir discharge effects, program of geo-mechanical simulation of the reservoir discharge effects, water pumping program, Kolubara, Pestan and Lukavica riverbeds reconstruction program, Kladnica dam reconstruction program. Ministry of Mining and Energy has invested large and serious efforts to ensure coordinated and efficient flood rehabilitation process, based on the accepted preliminary designs, open cast mines rehabilitation plan and Kolubara open cast mines damage assessment.