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1 Probable Maximum Flow Calculation

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The Probable Maximum Flow (PMF) is by definition the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the drainage basin under study. A PMF is generated by the probable maximum precipitation (PMP), which is defined as, theoretically, the greatest depth of precipitation for a given duration that is physically possible for a given size storm area at a particular geographic location at a certain time of year.

The purpose of the study was to calculate PMF for the Sava River which flows past the Krško Nuclear Power Plant (NEK). To assure flood safety of NEK it is important to know the possible maximum discharge of the Sava River. We used the 24-hour data of PMP that we got from the Environmental Agency of the Republic of Slovenia (ARSO) and divided them to hour's data. We calculated fifteen different scenarios by the American National Standard (ANSI/ANS-2.8-1992): scenario for spring rainfall, autumn rainfall, maximum annual rainfall. Three scenarios were made with combination of dry and wet periods, and two after the data were recorded in September 2007 flood event in Slovenia. Finally, the scenarios with snow melt impact on discharge and reduced probable maximum spring precipitation were made. The PMP scenarios data

were inputted in the calibrated HBV model for the Sava River basin and PMF was calculated. For the most probable scenario the scenario with reduced spring probable maximum precipitation which falls on the melting snow cover was chosen.