

A Dam Break Analysis Using MIKE11

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Abstract : The consequences of a dam breach can be devastating; both in terms of lives lost and damaged infrastructure and property. Hydraulic modeling provides a clear picture of the possible consequences of partial or complete failure of a dam, which is the key to carry out emergency planning and conduct reliable risk assessments. In this paper, the MIKE11 model developed by the Danish Hydrologic Institute (DHI) was used to simulate the flood wave propagation associated with a potential failure analysis failure of Zardezas dam located in the city of Skikda in the North East of Algeria. MIKE11 results including inundation maps and the representative channel/valley cross-sections depicting flow depth and maximal flow velocities showed that Zardezas reservoir presents a significant risk to downstream areas in the event of a dam failure. These results can be used as the basis of the development of an Emergency Action Plan (EAP). The main objective of this plan is to predict the appropriate steps to avoid or at least decrease the consequences of unexpected failure of Zardezas dam.

Keywords : MIKE11, dam break, inundation maps, emergency action plan

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