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# Simulation of damages due to cavitation in non-rotating components in a Kaplan turbine

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## **Abstract**

In a river power plant equipped with vertical Kaplan turbines damages were detected at the draft tube cone just below the runner at the smallest diameter of the unit. These damages were caused by cavitation and were registered 24 times, with an average size of 200 mm each, and appeared over the circumference of this non-rotating component. Each unit consists of a spiral made of concrete, a 5-blade runner with a nominal diameter of 5,1 m, an L-type draft tube and 24 guide vanes. A correlation between the guide vanes and the cavitation damages must be assumed. The simulation of these damages by means of CFD is presented providing evidence for a correlation between the guide vanes located upstream and the draft tube cone through the rotating runner located downstream.