



## **Towards real-time risk mitigation for NPP in Switzerland: the potential role of EEW and OEF.**

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Spurred by the research activities being carried out within the EC-funded project REAKT (Strategies and Tools for Real Time Earthquake Risk Reduction, FP7, contract no. 282862, 2011-2014, [www.reaktproject.eu](http://www.reaktproject.eu)), we present herein the key elements to understanding the potential benefits of routinely using Earthquake Early Warning and Operational Earthquake Forecasting methods to mitigate the seismic risk at NPP in Switzerland. The advantages of using the aforementioned real-time risk reduction tools are critically discussed based on the limitations of the current scientific knowledge and technology, as well as on the costs associated to both system maintenance and machine- or human-triggered actions following an alert. Basic inputs to this discussion are, amongst others: a) the performances of the Swiss seismic network (<http://www.seismo.ethz.ch/monitor>, where SeisComp3 is used as earthquake monitoring software) and the selected EEW algorithm (the Virtual Seismologist, VS, <http://www.seiscomp3.org/doc/seattle/2013.200/apps/vs.html>), in terms of correct detections, false alerts, and missed events; b) the reliability of time-dependent hazard scenarios for the region of interest; c) a careful assessment of the frequency of occurrence of critical warnings based on the local and regional seismicity; d) the identification of the mitigation actions and their benefits and costs for the stakeholders.