

## Post Fukushima Research in the View of the European TSO Network ETSON

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ETSON is the network of ten major European Technical Safety Organizations (TSOs) and of three associated TSOs from Japan, Ukraine, and Russia. ETSON aims at the convergence of nuclear safety practices in Europe by exchanging on nuclear safety assessment guidelines and by collaboration in research. As regards the Fukushima Daiichi NPP accident, the ETSON members obtained deep insights into the course of the accident including related human factor and emergency management aspects. With its knowledge about gaps in the understanding of safety relevant phenomena and about the needs for safety improvements, ETSON is an important driver for the definition and conduction of common post Fukushima research activities. Still in 2011, ETSON presented an Research and Development position paper that identifies the main research topics also taking into account the lessons learned from the Fukushima accident. Since then the ETSON Research Group has been spending continuous efforts to further prioritize the identified topics and to define coordinated research projects. In spring 2014, the ETSON Research Group held a workshop to exchange results of ongoing projects and to share views about common future activities. The workshop focused on the improved simulation of the Fukushima accident, including core degradation, vessel failure, and ex-vessel phenomena as well as Hydrogen distribution and explosion. Among others, it also highlighted the efforts to better understand the phenomena governing potential accident progression in spent fuel pools, and e.g. to improve the capability for fast and reliable source term assessment. Common work is also directed towards the support to IRSN in the development of the European severe accident reference code ASTEC. In order to efficiently work on these priorities, the ETSON members also participate in research projects of OECD/NEA like BSAF ( "Benchmark Study of the Accident at the Fukushima Daiichi NPP") and they collaborate in the framework of EURATOM projects like CESAM ("Code for European Severe Accident Management"). The paper will provide an overview on the Fukushima related research priorities pursued by ETSON members and will highlight the status by selected technical examples.

### Country or International Organisation

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