

## **Sensitivity studies on the accidental impact of 1 g of tritium for ITER site specific characteristics**

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One of the safety issues related to ITER concerns the potential impact of Tritium that could be released to the environment in a postulated accident. Many calculations have been performed in the past at ITER in order to assess the impact of 1 g of tritium release for generic sites.

As the final site located at the vicinity of Cadarache nuclear facilities in France is known, some additional calculations have been made to assess the effect of the nominal release of 1 g of Tritium for ITER site specific characteristics. These characteristics are related to weather conditions, the different distances with local populations, food consumption habits, animals and crops around ITER site. The calculation for a 1 g release is in order to study the effects of these parameters; all identified accident scenarios in ITER safety studies lead to a tritium release substantially below 1 g.

Sensitivity studies have been performed according to these characteristics, but also to assumptions related on the way the Tritium could be accidentally released (chemical form, height of the releases...).

As the results would also be used for demonstrating the low impact of tritium accident releases, care has been considered on the selection of the most penalizing assumptions in terms of results. The results have shown that whatever are the assumptions, the consequences of 1 g of Tritium that could be accidentally released into the environment is extremely low. In spite of this very low impact, many safety provisions are undertaken with regards to defence in depth principles in order to further reduce both the likelihood of an accident involving tritium and its consequences.