

**Long term evolution of spent nuclear fuel
in long term storage or geological disposal.
New findings from the French PRECCI R&D program
and implications for the definition of the RN source term
in geological repository**

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This paper aims to give a brief overview of the wide research undertaken in France in order to elucidate the potential long term evolution of spent nuclear fuels in long term storage or geological disposal. Scientific key issues related to the potential long term evolution in closed system, in presence of and oxidative phase and in presence of water are presented as well as the anticipated trends. A particular emphasis is put on the major outcomes of this research which is a new definition of the radionuclides source term for the geological disposal: we estimate that we have now to allocate a higher fraction of the radionuclides inventory to the so-called instant release fraction which is instantaneously released in presence of water.