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**LEU FUEL DEVELOPMENT at CERCA
Status as of October 1997
PRELIMINARY DEVELOPMENTS OF MTR PLATES WITH
UMo FUEL**

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ABSTRACT

UMo fuels are considered by the RERTR programme because of their higher density as compared to U₃Si₂. This paper is focused on the preliminary results about the manufacture feasibility of Uranium/Molybdenum fuel plates carried out by CERCA. A special procedure of casting and heat treatment has been developed in order to get an homogeneous gamma phase of UMo alloy. Although U-5%Mo allows to reach densities up to 9.9 U/cm³ with the advanced process developed by CERCA for the high loaded plates, it is not a good candidate on the thermal stability point of view. U-9%Mo alloy seems to gather all the criteria for a good fuel alloy but it is a little less effective on the Uranium density point of view as compared to U-5%Mo alloy. In any case, the preliminary feasibility results are very much encouraging because UMo alloys seem to be compatible with the Aluminium matrix when taking special care while manufacturing. A good compromise could be an intermediate percentage of Molybdenum or the addition of metal traces in order to thermally stabilise 5%Mo.

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