

PRELIMINARY DESIGN OF ZERO POWER REACTOR FOR CEFR MOX CORE

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Track 6. Test Reactors, Experiments and Modeling and Simulations

ABSTRACT

Research on MOX fuel has lasted for a long time in China Institute of Atomic Energy (CIAE). Right now the focused topics are the manufacture and irradiation performance test for the China Experimental Fast Reactor (CEFR) MOX assembly, large batch production for CEFR MOX assembly and the CEFR core transition from Uranium fuel to MOX fuel. In order to determine the uncertainty of the CEFR MOX core design and improve the design codes and nuclear data, a zero power reactor using MOX fuel will be built based on an existed fast zero power reactor DF 6# in CIAE. The preliminary design is carried out by UK Monte Carlo code MONK, using MOX fuel rods replacing part of 90% uranium fuel rods. New DF 6# will be the first MOX ZPR and experimental research platform in China. Important neutronic parameters will be measured and validations will be done for the design methods of Fast Reactor design in China.

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