

During the consultancy meeting in Vienna [5] possible items for a continuation of the benchmark exercise were discussed. Two points had been identified and recommended for further studies, two others are added by the editors of this report:

- a) Investigation of the wrapper steel heterogeneity in the core and, especially, in the plenum because this effect has a strong influence on the sodium void effect and requires highly elaborated methods.
- b) In connection with the BN-800 accident benchmark exercise organised jointly with IPPE, Obninsk, in the framework of the CEC Whole-Core-Accident Group, axial and radial reactivity worth distributions for sodium voiding, steel and fuel density changes, Doppler coefficients and kinetic parameters could be compared. This benchmark would help to quantify the spread within the input data used in safety studies.
- c) Evaluation of sodium void effect data measured in the zero-power facility in Obninsk on cores with sodium plenum. This exercise would allow a common qualification of the methods and data used for the evaluation of the present void benchmark and would help to reduce the uncertainty in the prediction of near-zero void effects.
- d) Besides the sodium void effect, the burnup reactivity loss is an important safety parameter because it determines the reactivity hold by the control rods at beginning of cycle and thus the positive reactivity effect in case of inadvertent absorber withdrawal. This reactivity effect and the related behaviour of fast reactor cores in transient overpower conditions can be improved by the use of high density fuels such as metal or nitride.

Therefore, a benchmark is proposed to evaluate the reactivity loss of a well defined fast reactor core with low burnup reactivity loss. The comparison of the solutions will give information about the feasibility of a core with low burnup reactivity loss and about the calculational uncertainties of this important safety parameter.