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Development of Cross-Section Library for DYN3D Code

At present, SSTC NRS uses the HELIOS code for generation of few-group cross-section libraries for WWER core calculations. There is an urgent issue of selecting the appropriate approach to implement the cross-section library into the DYN3D code. The paper overviews the application of approaches used by SSTC NRS, such as a multidimensional table and polynomial dependences. The capabilities and possible extension of each approach are described with inherent advantages and disadvantages. In addition, the model development and cross-section preparation for the WWER-1000 radial reflector taking into account discontinuity factors are discussed. Brief results of calculations with the use of different approaches are presented.

Keywords: WWER; cross-section library; fuel assembly; reflector.