Modification of the DYMOND Code for a Dry Process Fuel Cycle Analysis

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Abstract

For the analysis of the dry process fuel cycle, new modules were implemented into the fuel cycle analysis code DYMOND, which were used for the fuel cycle analysis of an innovative nuclear system. The modifications were made for the energy demand prediction model, Canada deuterium uranium (CANDU) reactor and the direct use of spent pressurized water reactor (PWR) fuel in CANDU reactors (DUPIC) fuel cycle model, fuel cycle calculation module, and the input/ output modules. The performance of the modified DYMOND code was assessed for a postulated fuel cycle model which included both the PWR and CANDU reactors, and the results were satisfactory.