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Sensitivity Studies of Tritium Transport to WCSB of CFETR

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Primary concept design of CFETR (Chinese Fusion Engineering Test Reactor) has finished. In the fusion reactor, tritium is bred by lithium and then be extracted. However, tritium will contaminate the reactor structures and be leaked out to the environment eventually. For realizing the environmental friendly and tritium self-consistency, a mathematical-physical model is established to analyze tritium transport in CFETR's WCSB (Water Cooled Solid Blanket). Some sensitivity studies of parameters on tritium losses and inventories were performed, the results show that the thickness of tungsten covering the first wall, the hydrogen concentration in coolant water and the water concentration in purge gas have significant impacts on tritium transport process.

Eligible for student paper award?

Yes

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