



IAEA FEC 201

Contribution ID: 604

Type: Poster

## Fusion Neutron Source Blanket: Requirements on Calculation Accuracy and Benchmark Experiment Precision

*Thursday, 20 October 2016 08:30 (4 hours)*

In this report the requirements to the calculation accuracy of the main parameters of the fusion neutron source and the thermonuclear blankets with the DT fusion power of more than 10 MW are formulated. To conduct the benchmark experiments the technical documentation and calculation models were developed for two blanket micro-models: the molten salt and heavy water solid-state blanket. The calculations of the neutron spectra and 37 dosimetric reaction rates that are widely used for the registration of thermal, resonance and threshold (0.25–13.45 MeV) neutrons were performed for each blanket micro-model. The MCNP code and the neutron data library ENDF/B-VII were used for the calculations. All the calculations were performed for two kinds of the neutron source: I is the fusion source, II is the source of neutrons generated by the  ${}^7\text{Li}$  target irradiated by protons with energy 24.6 MeV. The spectral indexes ratios were calculated to describe the spectrum variations from different neutron sources. The obtained results demonstrate the advantage of use of the fusion neutron source in future experiments.

### Paper Number

FNS/P5-11

### Country or International Organization

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**Session Classification:** Poster 5

**Track Classification:** FNS - Fusion Nuclear Physics and Technology