Nuclear Data Needs for Russia

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It is of interest to refine next the nuclear data:

For thermonuclear reactors and hybrid nuclear systems with a thermonuclear neutron source:

- Various nuclear reactions (n, p), (n, a), (n, 2n), (n, 3n) on structural materials (isotopes Fe, Cr, Ni, Mo, Al, V, Ti, C, Si, O) in the neutron energy range 8-16 MeV.

- Various nuclear reactions leading to the tritium production, especially the reactions ^{6}Li(n,α)t and 7Li(n,n)αt in the neutron energy range of 8-14 MeV.- Data for ^{232}Th and ^{238}U are required for reactions leading to the additional neutrons production (data for (n, 2n) and (n, 3n) reactions, neutron multiplicity and of prompt fission neutrons spectra).

For classic fission reactors:

- Improvement of neutron standards (prompt neutron spectra of ^{252}Cf(sf) fission, ^{6}Li(n,t) and ^{10}B(n,α) reactions).

- Measurements of the prompt fission neutron spectrum shape in the energy ranges 10 <En <500 keV and above 6 MeV for 235U fission by thermal neutron.

- Accumulation of gases in structural materials ((n, p) and (n, α) reactions for isotopes Fe, Cr, Ni, etc.).

For the production of medical isotopes:

- Refinement of the photonuclear reaction cross sections for the production of medical radioisotopes (^{226}Ra(g,p)^{225}Fr, ^{226}Ra(g,n)^{225}Ra, ^{100}Mo(g,n)^{99}Mo, ^{187}Re(g,n)^{186}Re, etc.).

- Systematization of nuclear data obtained at bremsstrahlung gamma sources.