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PETAL, a Multi PETAWATT Laser on the LMJ: Integration and Radiation Protection Issues D. RAFFESTIN, J. BAGGIO, N. BLANCHOT, A. COMPANT LA FONTAINE, E. LEFEBVRE, CEA/DAM — In 2015, PETAL, a multi-Petawatt laser beam, will be operated on the LMJ facility at the CEA/ Cesta research center. In addition to the LMJ nanosecond beams, it will provide an ultra-high-power short-pulse (500 fs to 10 ps), with a high-energy beam (few kJ compressed energy). To assess the potential exposure induced by PETAL experiments, three conservative source terms were evaluated. 1/ High energy photons (anisotropic) and photo-neutrons generated in thick and dense targets. 2/ Emission of protons driven by hot electrons in thin targets (directive emission) 3/ Isotropic production of fusion neutrons. For each source term, particle transport and material activation were estimated within the LMJ using the Monte-Carlo code MCNP-X. The final presentation will include the most recent information about on site commissioning, global architecture and radiation protection issues. This work is being performed under the auspices of the Conseil Regional d'Aquitaine, the French Ministry of Research and of the European Union, and with the technical supports of the Institut Lasers et Plasmas.

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