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Characterization of graphite reflector shielding emerged from NPP A1

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The decommissioning NPP A1 project is reaching preparation stage of dismantling the reactor KS 150. Graphite reflector shielding, is notable part of reactor internals which must be dismantled, managed and treated. Radiological characterizations were performed in order to determine 19 limited radionuclides and ³⁶Cl for LLW repository. Material characterisation was conducted by means of EDS –SEM and differential scanning calorimetry measurements were performed for Wigner Energy investigation. The last stage of graphite characterization are encapsulation experiments with non-activated A1 graphite. Encapsulation of graphite into cementitious grouts experiments were conducted in order to select suitable encapsulations recipes. During experiments were observed rheological properties of grouts, influence of graphite loading into cementitious matrix, curing and heat generation. After selection of suitable solidification recipes were conducted encapsulation experiments which lead to product quality evaluation (compressive strength and leachability).

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