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Separation and preconcentration of trace amounts of Sr-90 and Tc-99 from primary coolant water using commercially available sorbents and ion-exchangers.

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Among the fission products of U-235 are: Sr-90 and Tc-99. Information on their content in primary coolant water is very important because it indicates the state of the fuel rods in NPP. Different analytical methods could be used for the determination of Tc-99 and Sr-90, however each method requires separation and/or preconcentration of determined radionuclide. The problems are also related to large volume of samples, what is the case of coolant water. This study outlines some batch and column studies for selective separation of strontium and rhenium (as an analogue of technetium) using commercially available sorbents and ion-exchangers. Preliminary results suggest, that it is possible to separate strontium and technetium from boric acid (main components of primary coolant water and from other beta-emitters).

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