

mussel tissue certified reference materials under the same irradiation conditions, with zscore values ranging from -3.0 to 2.2.

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P16 **EVALUATION OF RADIONUCLIDE CONTAMINATION OF SOIL, COAL ASH AND ZEOLITIC MATERIALS FROM FIGUEIRA THERMOELECTRIC POWER PLANT**

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Neutron activation analysis and gamma-ray spectrometry were used to determine ^{238}U , ^{226}Ra , ^{228}Ra , ^{210}Pb , ^{232}Th and ^{40}K contents in feed pulverized coal, bottom ash, fly ash from cyclone and baghouse filters, zeolites synthesized from the ashes and two different soil samples. All the samples used in the study were collected at Figueira thermoelectric power plant, located in the city of Figueira, Parana State, where coal presents a significant amount of uranium concentration. The natural radionuclide concentrations in pulverized coal were 4216 Bq kg^{-1} for ^{238}U , 180 Bq kg^{-1} for ^{226}Ra , 27 Bq kg^{-1} for ^{228}Ra , 28 Bq kg^{-1} for ^{232}Th and 192 Bq kg^{-1} for ^{40}K . The ashes fraction presented concentrations ranging from 683.5 to 1479 Bq kg^{-1} for ^{238}U , from 484 to 1086 Bq kg^{-1} for ^{226}Ra , from 291 to 1891 Bq kg^{-1} for ^{210}Pb , from 67 to 111 Bq kg^{-1} for ^{228}Ra , from 80 to 87 Bq kg^{-1} for ^{232}Th and from 489 to 718 Bq kg^{-1} for ^{40}K . Similar ranges were observed for zeolites. The activity concentration of ^{238}U was higher than worldwide average concentration for all samples. The concentration of the uranium series found in the ashes were lower than the values observed in similar studies carried out 10 years ago and under the limit adopted by the Brazilian guideline (CNEN-NN-4.01). Nevertheless, the concentrations in this specific area are higher than in other coal mine and thermoelectric power plants in and out of Brazil, so it is advisable to evaluate the environmental impact of the installation.

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