International Symposium on Uranium Raw Material for the Nuclear Fuel Cycle: Exploration, Mining, Production, Supply and Demand, Economics and Environmental Issues - IAEA CN-216

Contribution ID: 22

Type: Oral

Implementation of a new milling process at Caetité-Brazil uranium site

Thursday, 26 June 2014 14:30 (30 minutes)

The Caetité-Brazil uranium facility produces about 400 tonnes/year of U3O8 from an ore averaging 0.29 U3O8 %. The steps of the process consist in: ore crushing, heap leaching with sulfuric acid, U separation and purification by solvent extraction with a tertiary amine followed by stripping with a sodium chloride solution and precipitation as ammonium uranate and then dried. A change in the milling process is in course in order to increase the production as well as uranium recovery. Heap leaching will be replaced by conventional tank agitated leaching of the <0.59 mm ground ore slurry in a sulfuric acid medium. Uranium stripping will be carried out with strong sulfuric acid solution in order to increase the efficiency of the operation. After pre-neutralization of the pregnant stripping solution U will be precipitated with hydrogen peroxide to have a product of better quality and environmentally friendly.

Primary author: Mr GOMIERO, Luiz Alberto (Indústrias Nucleares do Brasil S/A - INB, Brazil)

Co-authors: Dr MORAIS, Carlos (Centro de Desenvolvimento da Tecnologia Nuclear - CDTN/CNEN, Belo Horizonte-MG, Brazil); Mr RANGEL JR., Heraldo (Indústrias Nucleares do Brasil S/A - INB, Rio de Janeiro-RJ, Brazil)

Presenter: Mr GOMIERO, Luiz Alberto (Indústrias Nucleares do Brasil S/A - INB, Brazil)

Session Classification: Uranium mining and processing

Track Classification: Uranium mining and processing