Nitric acid solar container nuclear power plant

How nitric acid plants are designed?
Modern nitric acid plants are designed mostly according to three nitric acid process versions - mono medium pressure, mono high pressure and dual pressure. Medium pressure at about 4-6 bar will be preferred where a high ammonia efficiency is decisive for the plant economics.

How can a nitric acid production plant reduce NO x emissions?
Nitric acid production plant simulation and parametric analysis. Inclusion of a PFR for additional NO oxidations increases plant efficiency. Operating parameters to increase HNO 3 production and reduce NO x emissions. Data contribute to provide practical insights for optimum operation and design.

What is a high pressure nitric acid plant?
Mono High Pressure Process While medium-pressure nitric acid plants optimize the second critical chemical reaction, raising the pressure to 8 to 12 bars enhances the final step. The higher pressure "forces" the nitrogen dioxide (and dinitrogen tetraoxide, which is also produced in the oxidation phase) gas into water.

Can a nitric acid process plant be simulated?
In the open literature there are not many worksdealing with the simulation of a complete nitric acid process plant,most of them deal only with the absorption column and were developed for high pressure processes,while in this work a medium pressure process was studied,for which there are even less studies in the literature.

Why do nitric acid plants need dual pressure?
Most experts consider the dual-pressure process the best available technology,and most new high-capacity nitric acid plants are designed for dual pressure. Because both technologies are incorporated,a higher initial investment is required,but the greater capacity and lower operating costs help recoup the investment more quickly.

What is an example of a plant for nitric acid concentration?
An example would be a plant for nitric acid concentration that is basically made up of distillation columns. To concentrate the nitric acid it is necessary to break the water/acid azeotrope.

Learn how nuclear power plants work.Nuclear power is one of the ways humans produce electricity. The term nuclear power refers to the source of this energy--the nucleus of atoms! Here"s how it works. Inside a nuclear power plant is a nuclear reactor where heavy elements, like plutonium or uranium, ...

Liquid radioactive waste generated at nuclear power plants usually contains soluble and insoluble radioactive components (fission and corrosion products) and non-radioactive substances.

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Abstract This chapter deals with the corrosion of materials in spent nuclear fuel reprocessing plants. In such plants, the main corrosive agent is hot and concentrated nitric acid. We first present a review of ...

Even though various commercial ion exchange resins are being used in Korean thermal and nuclear power plants, all resins are made of styrene-divinyl benzene copolymer with the addition ...

One of the main limitations concerning the implementation of heat transfer fluids in Concentrated Solar Power (CSP) plants, are their compatibility with the construction material.

Modern nitric acid plants are designed to carry out the three chemical processes in a variety of ways, considering initial investment costs, space constraints, feedstock cost, and other factors.

It is concluded that the method of electrochemical denitration shows promise in removing nitric acid from various types of liquid radioactive waste due to its low energy intensity, ...

KBR has been a pioneer in development, design and delivery of Weatherly nitric acid plants globally since the 1950s, and now with the capability to provide our own Dual Pressure Nitric Acid production ...

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Energy Sources, Part A: Recovery, Utilization and Environmental Effects, volume 45, issue 4, pages 10952-10970 Energy, exergy, and sustainability analysis of an industrial nitric acid plant

In spent nuclear fuel reprocessing plants, nitric acid is the main process medium used for the separation of fission products, unused uranium and plutonium from irra-diated nuclear fuels by the well-proven ...

Developments in Nitric Acid Production Technology Modern nitric acid plants are designed mostly according to three nitric acid process versions - mono medium pressure, mono high pressure and ...

The objective of this work is to explore the usage of pure oxygen as an additional raw material for a nitric acid plant to optimize its production while reducing NOx losses, considering a ...

Nitric Acid (99 wt%) production from weak nitric acid (wt%). The process examined is a typical Sulfuric Acid process. In this process, weak nitric acid (65 wt%) is concentrated up to 99 wt% Nitric Acid by ts ...

The objective of this study is to develop a life cycle assessment (LCA) of the leaching process of photovoltaic modules using nitric acid as a leaching agent and to employ the results to ...

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The TBP extractant is stable in contact with high concentrations of nitric acid, so the acid can be used as a salting agent. The PUREX process was first used at the Savannah River Site in South Carolina in ...

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