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Conception liquid salt raceway shaft reactor for uranium 238 or thorium

Description:

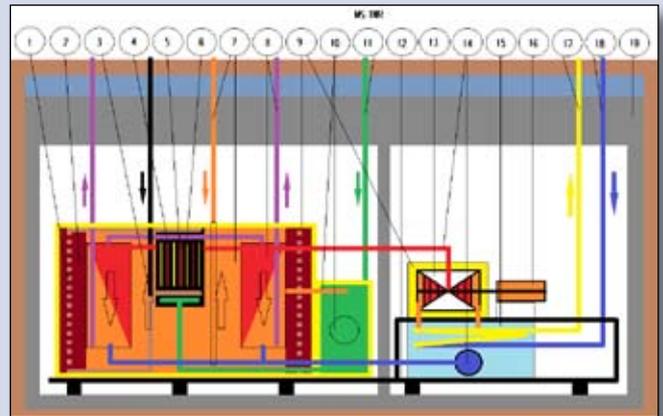
In a liquid salt raceway shaft reactor there is the neutron capture shaft and the fission shaft. These shafts are separated from each other in time and space. In the neutron capture shaft a thermal neutron spectrum is used. The fission shaft uses the fast neutron spectrum. The reactor is working on the transit principle. The liquid salt with the fertile material is moved and the shafts stand still at a position. The shaft distance in the reactor is depending on breeding time and attributed to material throughput or volume flow. The reactor is a conceptual development and combination of my raceway shaft reactor and the raceway shaft-transmutation reactor with solid fuel elements.

Problem analysis:

In liquid salt reactors are the neutron capture shaft and the fission shaft, the fertile material and the fission products in time and space in a limited area. This causes very high neutron losses by fission products and their separation via process.

Advantages:

The reactor is lightweight, secure and compact. The throughput pressure of the salt is low so there is no danger of explosion. The reactor mitigates the problem with nuclear waste. The time of toxic radiation of the fission products is reduced. Low neutron losses in the process. The power plant operators are almost



independent from Uranium 235-imports and their price volatility.

Requirement analysis:

The supply of electricity and heating should be affordable, climate-friendly, clean and stable in price in the long term. Wind and sun power plants are power plant-neutral. For grid stability, decentralised control power plants with cogeneration are needed. The control power plants have to be secure, reliable, profitable and efficient.

Target group:

Target groups are power plant builders and operators like municipal utilities and larger companies.

Markets:

All nations, which intend to use nuclear energy in addition to renewable energies and have thorium and/or uranium 238 or nuclear waste with transuranics at their disposal.

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