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Cost Benefit Analysis of Liquid Radioactive Waste Treatment Methods

Along with the development of nuclear technology, such as nuclear reactors, comes the potential to produce radioactive waste. One of the wastes from the operation of a nuclear reactor is liquid radioactive waste, which must be treated properly to ensure environmental safety. Liquid radioactive waste treatment can be done in various ways, such as by evaporation and ion exchange. Evaporation is the treatment of liquid radioactive waste by evaporation using steam, while ion exchange is the treatment of liquid radioactive waste by exchanging the cations or anions in the waste. From the two methods of liquid radioactive waste treatment, it is necessary to carry out a cost-benefit analysis in order to achieve efficient and cost-effective liquid radioactive waste treatment. Cost-benefit analysis can determine an optimum method by combining aspects of safety and sustainability. In the aspect of safety, the potential dangers of the two methods of treating liquid radioactive waste Whereas in the aspect of sustainability, the energy requirements required from both liquid radioactive waste processing methods.

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