

The Prospect of Nuclear Power Integrated Desalination Plants in Saudi Arabia

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Despite the amount of water on our planet, water scarcity is a crucial problem facing the world. Thus, many countries resort to seawater desalination to solve this problem. Some of the most popular desalination technologies in the world are Reverse Osmosis desalination (RO), Multi Effect Desalination (MED) and Multi-Stage Flash desalination (MSF). These technologies are operated by heat and electricity, which are conventionally provided through fossil fuels. The world's largest desalinated water producer by a significant margin is Saudi Arabia. Consequently, with the prospect of reducing the dependence on fossil fuels and shifting to more environmentally friendly sources, nuclear desalination will be a contributing factor. This study discusses the process of coupling Nuclear Power Plants (NPPs) with RO desalination plants in Saudi Arabia. As well as provide valuable recommendations to utilize the country's new nuclear ventures in its already existing desalination infrastructure.

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