

# NUCLEAR ENERGY

## THE BETTER ENERGY

APRIL | NEWSLETTER | 2020

*Nuclear Energy - The Better Energy is an initiative to create awareness about the benefits of Nuclear Energy and to help the society get rid of the fears and misconceptions related to this environment friendly source of energy. We proudly present our April newsletter.*

### **NUCLEAR 101**

Nuclear 101 is a section where we will bring to you some of the most basic concepts of Nuclear Physics explained in a non-specialist way

Use of radiation for medical purposes such as X-rays and CT scan has allowed doctors to diagnose and treat various diseases over the years.

Detection of broken bones can be done by subjecting the affected body part with a dose of X-ray radiation. Various types of tumors can be detected by inserting a small quantity of a radioactive material and tracing its path in the blood stream. Radiation can also be used to treat different kinds of cancer.



A common example is the use of radioactive iodine to treat thyroid problems, including cancer. Any patient undergoing these procedures receive a radiation dose. However, these doses present very small risk. The effective doses can range upto 3.7 rem for a tumor imaging procedure while a chest X-ray exposes you to only 0.002 rem of radiation.

These doses are low enough for a human body to handle naturally. A fatal or a potentially dangerous radiation dose is greater than about 1000 rem; certainly a lot more than what we receive from Nuclear medicinal procedures.

Source: [www.radiationanswers.org](http://www.radiationanswers.org) and [thebetterenergy.net/radiation-and-the-fear-factor](http://thebetterenergy.net/radiation-and-the-fear-factor)

## Highlighted Articles

### *The UK's nuclear history*



The first commercial nuclear power station in the United Kingdom began operation in 1956 in Sellafield, Cumbria. For more than 60 years now, nuclear power has been generating electricity and supporting the country's defence. The UK's energy policy focuses on producing electricity from nuclear power alongside other sources such as gas, solar and wind. Today, nuclear power provides one-fifth of the country's total energy requirements.

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### *EPR - fortifying the safety of Nuclear Energy*

The ever-growing energy demands call for improvement in existing nuclear reactor technologies. This includes the need for higher yields with lesser fuel inventory while keeping in mind the safety aspects associated with the design features of the nuclear reactor. From a design perspective, the safety of a nuclear reactor depends on the concept of "defence-in-depth".

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## DID YOU KNOW?

The first satellite powered by nuclear fission was launched on April 3, 1965. Known as SNAP-10A, it was launched from the Vandenberg Air Force Base in the U.S. The purpose was to study the potential of utilizing nuclear power for space exploration.

This satellite paved the way for further research in the use of nuclear fission for space exploration. Reactors like these may be used to power journeys deep into outer space and could also be used to generate electricity on the moon, Mars and any other places we might eventually go!

*Source: International Atomic Energy Agency (IAEA) social media post*

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