



Devastating Consequences of Nuclear Accidents: Chernobyl, Fukushima and Three Mile Island

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Description

Nuclear energy has become an integral part of modern society. It provides a significant proportion of the world's electricity and has been embraced as a clean, safe, and reliable energy source. However, nuclear accidents have occurred throughout history, resulting in significant consequences for both human health and the environment.

Chernobyl

The Chernobyl disaster, which occurred on April 26, 1986, was the most significant nuclear accident in history. The explosion and fire at the Chernobyl nuclear power plant in Ukraine resulted in the release of large amounts of radioactive material into the atmosphere, leading to the deaths of 31 people, and causing widespread contamination of the surrounding areas.

The main cause of the Chernobyl disaster was a combination of design flaws and operator errors. During a routine safety test, the reactor experienced a power surge, which caused a series of explosions that destroyed the reactor core. The graphite moderator used in the reactor caught fire, and the resulting smoke carried radioactive particles into the atmosphere.

The consequences of the Chernobyl disaster were severe and long-lasting. The immediate impact was the evacuation of over 100,000 people from the surrounding area, with many more suffering from acute radiation sickness. The environmental and health effects of the disaster are still being felt today, with an increased risk of cancer and other radiation-related illnesses in the affected regions.

Fukushima

On March 11, 2011, a massive earthquake and subsequent tsunami struck Japan, leading to the Fukushima Daiichi nuclear disaster. The

disaster was caused by a loss of power and cooling to the reactors, resulting in three meltdowns and the release of radioactive material into the atmosphere and ocean.

The Fukushima disaster was the second-worst nuclear accident in history after Chernobyl. It led to the evacuation of over 150,000 people from the surrounding areas and had significant environmental and health consequences. Although no direct deaths were attributed to the accident, it has had a profound impact on public perception of nuclear energy and its safety.

Three Mile Island

The Three Mile Island accident, which occurred on March 28, 1979, was the worst nuclear accident in the United States. The accident occurred at the Three Mile Island nuclear power plant in Pennsylvania, where a partial meltdown of one of the reactors occurred.

The cause of the accident was a combination of equipment malfunctions and operator errors. A cooling malfunction led to the partial meltdown of the reactor, which resulted in the release of radioactive gases into the atmosphere.

Although the consequences of the Three Mile Island accident were not as severe as those of Chernobyl or Fukushima, it had a significant impact on public perception of nuclear energy in the United States. It led to increased safety regulations and a re-evaluation of the safety of nuclear power plants.

Nuclear accidents are rare but have significant consequences when they occur. Therefore, it is essential to take measures to prevent such incidents from occurring in the future.

Some of the measures taken to prevent nuclear accidents include:

- **Improved safety regulations:** Safety regulations for nuclear power plants have been significantly strengthened since the accidents at Three Mile Island, Chernobyl and Fukushima. These regulations include the requirement for regular safety inspections and the implementation of safety procedures to prevent accidents.
- **Improved design and construction:** The design and construction of nuclear power plants have been improved to prevent accidents. New reactors are designed with safety features that would prevent a repeat of past accidents.

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