Essay on Nuclear Reactors and Nuclear Reactions

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Nuclear Reactors are a groundbreaking technology that has been used to provide electricity alongside Coal and Natural Gas. Although Nuclear Reactors are effective, how do they work? According to an article written by the United States Department of Energy, Nuclear Reactors contain and control Nuclear Chain Reactions that produce heat through a physical process called Fission. That heat is then used to boil water into steam which will spin a turbine in order to create Electricity.

Despite the effectiveness of Nuclear Reactors, a malfunction in the system would be a catastrophic disaster if it is to occur. According to The United States Energy Information Association, An Uncontrolled Nuclear Reaction could result in widespread contamination of air and water. However, they have also stated that the risk of that happening in the United States is small due to multiple factors such as the diverse and redundant barriers and safety systems in place at nuclear power plants, the training and skills of the reactor operators, and more.

Nevertheless, Nuclear Reactors remain a threat to our environment due to the process of running a Nuclear Power Plant. According to an article written by Rose Kivi, Nuclear Power Plants may NOT produce greenhouse gasses during operation, The Process of building and running the Power Plants emit High Amounts of carbon dioxide. Nuclear Plants also Produce low amounts of Radiation which Long Term Exposure could cause damage to DNA. According to the U.S. Nuclear Regulatory Commission (U.S.NRC), Living within 50 Miles of a Nuclear Power Plant can give you an average radiation dose of about 0.01 millirem per year.

Furthermore, Nuclear Power Plants create radioactive waste which can last for over 1,000 years. The U.S.NRC states that High-level Radioactive Waste is composed primarily of Uranium fuel which was used inside a nuclear power reactor and is “spent” which is to say that it is no longer efficient in producing electricity. Moreover, High-level Waste Is hazardous due to the fact that they are able to emit fatal doses or radiation during short periods of direct exposure.

Lastly, The Water-Cooling System of Nuclear Power Plants are hazardous to the Aquatic Biodiversity. The Article Written by Rose Kivi states that the process of pulling the water from a river or the ocean ends up also capturing fish and killing them. Likewise, the water is returned to the river or ocean after it has been used and heated up 25 degrees hotter than when it was pulled in, which in turn ends up killing more fish.

Overall, I believe that even if Nuclear Energy is a Sustainable and Clean energy source, It is still a hazard to our environment and the wildlife inhabiting it.

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