Nuclear energy is a type of energy that uses the splitting of the atom to release an extreme amount of power. While it has a purpose as a weapon it also has the benefit of being able to power an entire country if used effectively. Some of the claims that nuclear energy entails is that first it’s a sustainable replacement for fossil fuels but even though it releases a lot of energy nuclear energy is dangerous and shouldn’t be used at a nation wide scale. These claims have good evidence to support them, mainly the first two claims but the third claim is a stigma revolving around failures of nuclear energy and the inability to see past mistakes, of mainly humans, and realize the greatness this type of energy generation entails.

The first claim that comes to mind when talking about nuclear energy is that it could be a replacement for fossil fuels. To get a representation of how much fossil fuels could be replaced we first need to see how much electricity is generated from them. As of February 2022 fossil fuels generated 60.8% of the U.S’s electricity with a majority coming from natural gas (38.3%) and coal (21.8%) 4. While nuclear currently only contributes about 19% to the total production of energy in the U.S the amount it could be given how much nuclear energy creates. One uranium pellet, ½ in. height and diameter, contains an equivalent amount of energy to 1 ton of coal, 149 gallons of oil, and 17,000 ft3 of natural gas 1. If we take the 454 tons5 used by the U.S to produce electricity that means that it would only take about 227 in. of uranium to produce the same amount of energy. To put that into perspective, those 227 in. of uranium when put into pellets would only be about 2.5 pounds. A huge reduction from the 454 tons we started with.

The next claim that comes to mind is that it’s dangerous. While nuclear energy isn’t completely safe, nuclear energy is one of the safest energies on the planet but if that’s the case why does everyone view nuclear energy as extremely unsafe? Its more than likely because of the stigma caused by the Chernobyl reactor meltdown in the USSR now Ukraine as well as the Mile Island accident here in the US. When people think of these disasters they probably think of radiation. While radiation is dangerous nuclear energy doesn’t release a lot of radiation into the environment, in fact coal is the major source of radiation released into the environment from its waste called fly ash 2. Fly ash is made up of the mineral waste from burning coal, the main two elements in this wase that are radioactive are uranium and thorium 2. Nuclear Energy also has an extremely low death rate per unit of electricity produced. Nuclear energy has a death rate of 0.03 per Terawatt hour while coal has a death rate of 24.62 – 32.72 depending on the type of coal used 3. These numbers are based on the number of accidents and the deaths from air pollution.

These two claims show how nuclear energy is a great source of electricity that could be used for many reasons. These claims also show how even if something is technically efficient and more reliable than an existing source historic stigmas can affect how people view that source. Nuclear energy has had a troubled past but with further research and a willingness to give things a try nuclear energy could be a worth while venture when it comes to exploring innovations into generating electricity.

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