What is it about nuclear power that PSR activists reject it?
Dave Hall MD, WPSR Board member - May 17, 2022

If we looked at the auto industry in the same way, we'd talk about how many people are killed in car wrecks, the deadliness of smog, the concreting of land, oil spills, and the environmental hazards and expense from production and recycling of cars and trucks. Instead we celebrate the one fifth of the American economy that propels our daily lives, and socialize the costs to our healthcare system, to environmental sustainability, and to devastated families.

Why do we debase the cleanest baseload source of electricity in the US when nuclear plants power twenty percent of the electricity that drives our economy and half the carbon-free electricity, all with a safety record as good or better than either wind or solar?

Objections to nuclear power center on nuclear waste, the nuclear power accidents at Three Mile Island, Chernobyl, and Fukushima, and the high costs of construction. In sum, "Dirty, Dangerous, and Expensive."

These problems are real and require honest answers.

Let's start with "Dirty", the waste.

There are two very different kinds of nuclear waste, military and civilian — waste from nuclear weapons production and waste from civilian nuclear power plants. The waste from nuclear weapons production contains highly radioactive elements some of which are usable for making more weapons. It is highly toxic and cannot be allowed loose in the environment. It is truly "dirty." The Hanford Nuclear Reservation is a case in point. Securing these wastes from terrorists is a security industry all its own. This is military waste and the price we are still paying for its development during World War II and continued use right up to today.

Civilian waste on the other hand from the lifetime of 94 nuclear power plants could fit in 40 rail cars that typically carry coal to coal-fired electricity plants. It is much less radioactive and does not have the complex chemical toxicity of military waste. Currently it is stored safely in cooling tanks then placed in above ground tanks often on site

at the plant that produced it. This waste has been secure for fifty years and is much more manageable than military waste.

"Dangerous", the nuclear plant accidents. Three Mile Island and Chernobyl were both caused by human error. TMI operators mistakenly turned off the cooling power and the reactor core melted down, and still no one was injured or killed. Chernobyl operators were experimenting with low power operation and lost control of the nuclear reaction leading to an explosion and fire that sent highly radioactive gasses hundreds of miles and caused the evacuation of thousands of nearby citizens. Fukushima had four backup power sources that all were inundated by the tsunami, a siting catastrophe not anticipated in the location planning.

Based on these three "accidents", nuclear power is said to be "dangerous." None of the other 11 nuclear plants in Japan were damaged. The only radiation deaths from civilian nuclear power reactors occurred following the Chernobyl meltdown largely because it was built without a containment vessel. There are 436 other nuclear power plants around the world and all continue to operate safely.

So this gets us to "Expensive". PSR, the Green New Deal, and other environmental initiatives have challenged the nuclear power industry as being too "expensive". The ready availability of natural gas in the US has financially undercut nuclear power's ability to compete on the financial markets while continuing to add CO2 to the atmosphere. This was the undoing of four nuclear power plants in Washington State. The fossil fuel industry now touts carbon capture and use (CCUS) as a way to keep coal plants going, calling it "clean coal". Studies show that they are as far away from commercial scale as new nuclear power plants are while continuing to spew CO2 into our common air. The expense of nuclear power is upfront construction costs which are calculated to amortize over 40 years. However, 95% of these plants have been licensed for another 20 years, which makes nuclear power the cheapest power available, and a few of them are already approved for 20 years beyond that.

In summary, 1) nuclear power waste is not nearly as dirty as military waste and has modern technologies to contain it. 2) The nuclear power industry is NOT dangerous, unlike the fossil fuel industry responsible for up to 8 million premature deaths a year. New generation nuclear power plants are inherently safe and global safeguards for the waste are built into all the new projects. 3) Costs are high in relation to subsidized fossil fuels, and that's a political issue we must solve by reworking subsidies. Replacing carbon producing energy sources is orders of magnitude more expensive than supporting current nuclear plants and pursuing the safe, variable power producing fourth generation nuclear power options that harvest the million to one energy benefit over chemical energy. In addition, the costs from extreme climate events already occurring will grow exponentially as we fail act rapidly and robustly enough to reverse global greenhouse gas emissions. In short, nuclear power could well be the savior when the scale limitations of totally renewable energy is reached in 2050 and fossil fuels still provide half or more of the world's energy needs. Disseminated new nuclear power options could by then provide baseload energy supplies needed to maintain local and national economies with carbon-free energy.

When we wake up in 2050 and realize we have all the power sources needed to avoid whole countries inundated or sweltering, on fire or fleeing to safer countries, we will be happy and proud to have supported abundant nuclear power in combination with robust renewable energy sources.