THE GREEN ATOM

KITE & KEY MEDIA

[VIDEO TRANSCRIPT]

Three Mile Island. Chernobyl. Fukushima.

The very mention of them conjures up visions of terror. Radiation. Meltdowns. Utter catastrophe.

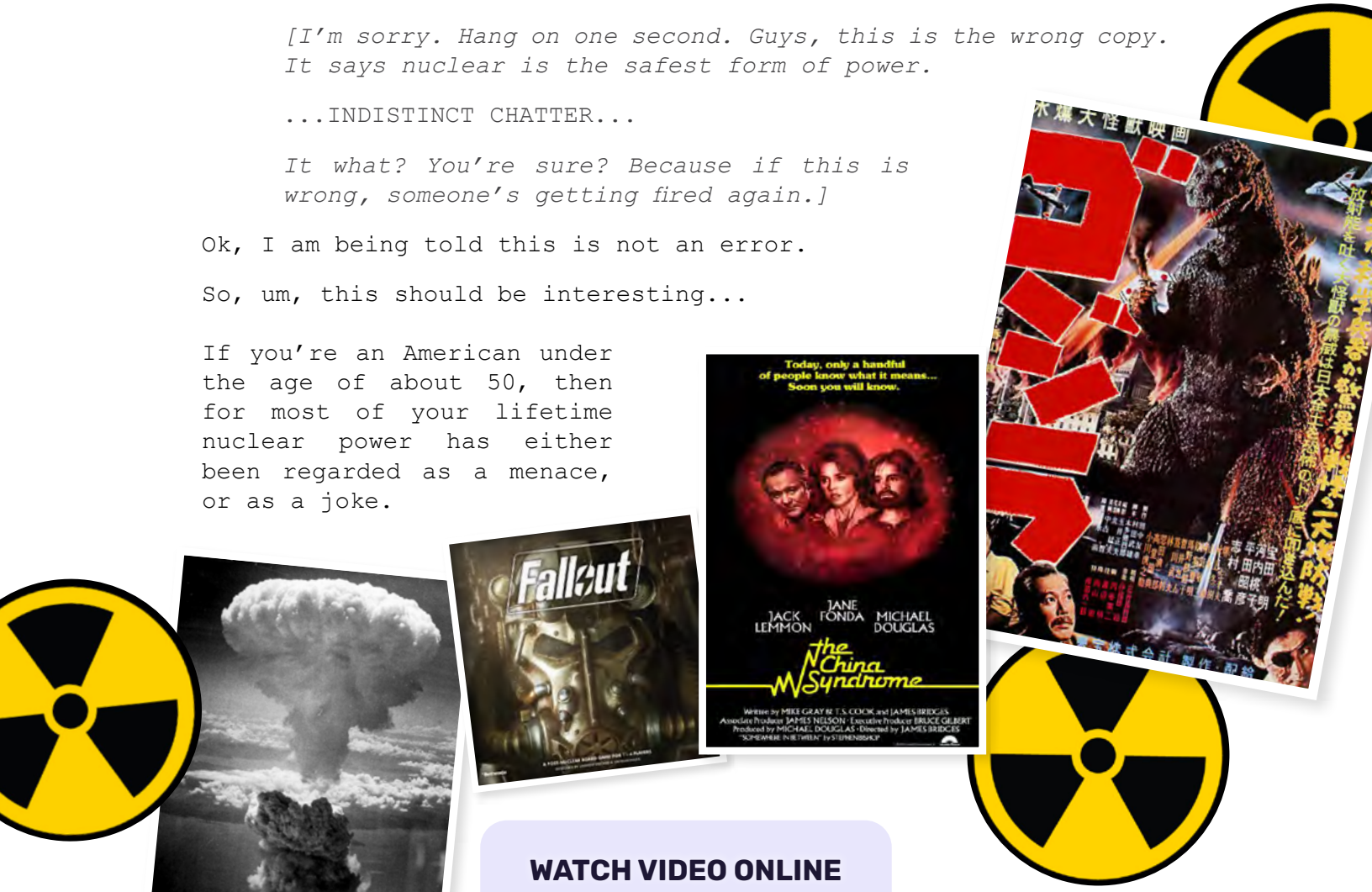
Those disasters are all part of the story of how nuclear power became...the safest energy source known to man.[1]

> *[I'm sorry. Hang on one second. Guys, this is the wrong copy. It says nuclear is the safest form of power.*
>
> ...INDISTINCT CHATTER...
>
> *It what? You're sure? Because if this is wrong, someone's getting fired again.]*

Ok, I am being told this is not an error.

So, um, this should be interesting...

If you're an American under the age of about 50, then for most of your lifetime nuclear power has either been regarded as a menace, or as a joke.



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Either way, you're probably vaguely aware you're supposed to be scared of it. Why is that exactly?

Well, for years, critics of nuclear energy warned that the technology was dangerous: that **meltdowns** could result in widespread deaths, radiation exposure, or even deadly explosions.

Because the public often conflates nuclear power with nuclear weapons, there is a widespread belief that nuclear power plants could blow up in the same fashion as an atom bomb. It isn't true. Nuclear bombs rely on a specific arrangement of their constituent materials that is not present in nuclear power.

Then, when crisis hit at places like Three Mile Island and Chernobyl and Fukushima, it seemed like those critics had been right all along.

But were they?

Three Mile Island is often referred to as the worst nuclear disaster in American history—but, as disasters go, it was pretty underwhelming. No one died. Or was injured. Or even had any adverse health effects. Locals' exposure to radiation was about 1/3 what you'd get on a cross-country flight.[2]

At Fukushima, the levels of radiation were so low that the United Nations reported that the ***mental health*** **of those who had been evacuated was a bigger health concern than cancer.**[3]

Chernobyl was a different story. It was a genuine disaster, and the radiation *did* lead to deaths—but the problem there wasn't about nuclear power itself. Officials in the Soviet Union knew the plant had dangerous design flaws but refused to fix them. Then they covered up the accident and delayed warning locals to evacuate.[4]

The health consequences of Chernobyl, while tragic, are often overstated. There were 28 deaths amongst the firefighters who responded to the scene. An additional 19 first responders would later die of causes linked to the disaster. While 28,000 cases of thyroid cancer were initially blamed on Chernobyl, subsequent research found that only about 5,000 could plausibly be connected to the accident. Because of thyroid cancer's low mortality rate, the expected number of deaths from those cases is 50-160.

CHERNOBYL, UKRAINE

And it's worth noting: it took a situation that extreme to produce **the only deaths from radiation in the entire history of commercial nuclear power.**

While the Japanese government did compensate the family of one Fukushima worker who subsequently died of lung cancer, the evidence suggests the cancer was unrelated to the accident.

Now maybe you're thinking even one death is too many, and that sounds reasonable...except you know what power source is more dangerous than nuclear? Literally all of them.[5]

When you add up industrial accidents *and* the effects of pollution, nuclear is safer than coal or petroleum or natural gas.[6] In fact, more Americans have fallen off roofs installing solar panels than have been killed by nuclear power.[7] And as for nuclear waste—that's never killed or injured anyone either.[8]

So why does any of this matter?

Because nuclear power doesn't emit carbon dioxide.

It's America's single largest source of clean energy, responsible for 52% of the country's carbon-free electricity.[9]

But partly because of the fear factor, nuclear plants all around the country are closing.

As of December 2020, the U.S. had 56 nuclear power plants located in 28 states. Five nuclear reactors are scheduled to shut down in 2021 alone, the most nuclear capacity that the U.S. has ever taken offline in a single year. Recent estimates suggest about half of the country's nuclear facilities could close within a decade.

Now maybe this doesn't sound like that big a deal. If we want clean energy, we can just get it from wind or solar, right? Well, yeah, unless you're listening to those cranks at...MIT...who found that only with resources like nuclear in the mix can we do widescale carbon reductions while still keeping energy affordable and keeping the lights on.[10]

We can see this in Europe: Since the year 2000, Germany has been eliminating nuclear power and emphasizing wind and solar. Next door in France, meanwhile, they still get over 70% of their energy

from nuclear. The result: France's electricity costs are about half of Germany's. And Germany's emissions are **10 times as high** as France's.[11]

When asked about Germany's experiment, French President Emmanuel Macron said, "They worsened their CO2 footprint, it wasn't good for the planet. So I won't do that."[12]

Ouch. When you're getting lectured on efficiency by the French... maybe time to start thinking twice?

Could the same thing happen in the United States? It already is. When nuclear plants were prematurely closed in California, New Jersey, and Vermont, all those states had to rely instead on energy sources that caused their carbon emissions to spike.[13]

The tendency for a decrease in nuclear power to lead to an increase in carbon emissions has even led some environmental groups that once opposed nuclear power to change their tune. The Union of Concerned Scientists, long one of the foremost opponents of nuclear power, declared in 2018 that the closure of nuclear plants "raises serious concerns about our ability to achieve the deep cuts in carbon emissions needed to limit the worst impacts of climate change."

But with different policies, the effects could go the other way. Take California, for example.

The Golden State is often considered a leader in clean energy...but one analysis found that if California had dedicated the amount of money it's spent on wind and solar since 2001 to nuclear instead, it could have generated 100% of the state's electricity carbon-free.[14]

Nuclear power isn't without challenges. It's expensive and time-consuming to build. In some cases, it may require subsidies to compete with wind and solar, which already receive heavy taxpayer support. And many people are still scared of it. But it could also totally reshape the way we power our economy. And it might just save the planet in the process.

The 'expensive' and 'time-consuming' part could be changing soon. Nuclear power may be revolutionized by the development of the Small Modular Reactor (SMR). SMRs, which function as a kind of miniature, portable nuclear power plant, can be factory-assembled, dramatically decreasing costs and construction time.

[Alright guys, I apologize. That was actually interesting. The thing about the French was a little rough though.]

[END OF SCRIPT]

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