“Nuclear Energy Debate”
By
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Characters

Mediator Michael Smith
Dr. Robert Swaim - Age 56, Nuclear Researcher
Mrs. Elise Cohen - Age 35, Degree in Environmental Sciences

Stage

Two Podiums with speakers behind them. There is a nuclear energy plant pictured on the white screen in the background. There is an audience watching.

Script

Smith

[In a well-informed, formal voice] Billions of tons of Carbon Dioxide enter the atmosphere annually due to humanity's actions. The majority of the science community agrees that Carbon Dioxide in excess acts as a pollutant that raises the average temperature and alters climates across the world. Many scientists recommend a switch from fossil fuel based energy sources to clean, renewable energy. The most prevalent renewable energy source today is nuclear energy, but should we continue the proliferation of nuclear energy?

[In a warm voice mixed with applause] To help us answer this question is a nuclear researcher with a PHD in Nuclear Physics: Dr. Robert Swaim. We also have Mrs. Elise Cohen, who has a degree in Environmental Sciences. [Applause dies down] Why don't both of you tell us what your position is on the issue?

Swaim

Thank you, Michael; I believe that the future will revolve around Nuclear energy!

Cohen

And I believe that other renewable energies should take precedent over nuclear.

Smith

One of the pressing issues involved with fossil fuels is the effects they put on the environment. Why is nuclear energy different?

Swaim

Nuclear energy is a very clean energy source which emits very few greenhouse gasses.

Cohen

Dr. Swaim is not giving all the facts. You see, while nuclear energy emits very few greenhouse gasses, it also leaves behind extremely potent nuclear waste called spent fuel rods. These rods remain radioactive for hundreds of years. How do you propose we deal with the hazard of nuclear waste, Dr. Swaim?

Swaim

[In a slightly annoyed tone] The current belief among the scientific community is that the risks of nuclear waste are small, and current technology will be improved to further deal with that issue.

Cohen

So you are proposing that we leave the dangers of nuclear waste to chance? If we proceed with the advancement of nuclear power plants we will add to the tens of thousands of tons of nuclear waste that are in existence. These spent fuel rods pose a more immediate threat than greenhouse gasses currently do.

Smith

Eh-hem. Excuse me for a change of subject, but many in the audience have seen or heard about the nuclear disasters at Chernobyl, Three Mile Island, and Fukushima. What do these disasters mean for the future of nuclear energy?

Swaim

These disasters were either caused by operator error or a mistake that we've learned from. The disaster at Chernobyl occurred because workers attempted an unauthorized experiment that went horribly wrong. Three Mile Island occurred by a mistake that we no longer make, and Fukushima occurred due to a tsunami which could not have been prevented.

Cohen

Dr. Swaim has an ability to make clear and present dangers seem like learning opportunities. Nuclear power plants have an unpredictable danger. We never know when a worker will perform an [sarcastic

tone] “unauthorized” experiment, or an mistake occurs, or even a tsunami hits. These things could happen anytime and at any plant. Not only that, but the result from one of these “errors” is cataclysmic, to say the least.

Swaim

Cataclysmic is hardly the word to describe the Fukushima scare. According to the article: “Debate: Nuclear Energy” less than 10 people have died from radiation at Fukushima.

Cohen

While that statistic may be true it leaves out some facts. Many of the workers who spread water on the reactor took in a large and unhealthy amount of nuclear radiation. Over a decade or two many will experience a much higher affinity to cancers and tumors, not to mention other fatal diseases. By the end of the century it is safe to assume that thousands will have died due to Fukushima. On a separate note, the death toll from radiation related diseases was more that 175,000 at Chernobyl. [With emphasis] THAT, I would call cataclysmic.

Swaim

It has been concluded by a United Nations committee that the increased cancer rate due to nuclear radiation is a myth. Going back to the Fukushima scare; Gwyneth Cravens said: on average the clean-up workers at Fukushima received less nuclear radiation than they would have if they had lived in the state of Washington for a year.

Smith

Sorry to cut you two short, it looked like you were preparing to say something, Mrs. Cohen, but many in the audience do not understand the economics of nuclear energy. Could you both explain the pros and cons?

Swaim

The economics behind nuclear energy involve low costs once the capital is invested. Tthe maintenance is

fairly cheap, and the initial investment pays off in the long run. Uranium is a very cheap and abundant metal that fuels nuclear plants. There is enough Uranium metal to last for decades.

Cohen

Dr. Swaim tries to overlook a key point: the capital involved. The initial investment required to build a nuclear power plant is an incredible sum of money that cannot be overlooked. The initial investment for a nuclear plant is usually greater than 10 billion dollars. Ferguson said, “coal wins out over nuclear in terms of financial costs.” As well, Dr. Swaim discusses Uranium as though we have an infinite supply. The Uranium metal left will only last for 70 years at our current demand rate. Why should we spend billions of dollars researching a truly non-renewable energy?

Swaim

One thing that I would like to point out is that the Uranium timetable that Mrs. Cohen has proposed is based on current nuclear plant consumption. We are currently designing plants that require much lower amounts of uranium. These plants will allow the current Uranium supply to last many centuries.

Cohen

Even if the research does solve the supply of Uranium, how can you advise projects with such high initial investment prices while economic gains require decades of waiting? It’s the huge costs and lack of short term gain that scares away investors. The last U.S. nuclear reactor to be purchased occurred in 1970. It has been over 40 years since someone has been able to fund the enormous investment for a reactor.

Smith

Sorry to interrupt, but it is about time we moved on to our finishing remarks.

Swaim

I still hold firm that nuclear energy is the cleanest and most efficient renewable energy source, and I hope you do too.

Cohen

And I still believe that nuclear energy is a danger to society, and should not be used.

Smith

Thank you both for the knowledge you brought. I hope the audience has learned enough to be able to take a side on whether nuclear energy should be used.