

Uranium Mining Speech

-Intro

Hello, my name is Jeff Colden and I am a Mining Engineering Graduate Student. First off, let me say that I consider myself an environmentalist. I am here to discuss how I think the anger you all feel towards nuclear power, and the sense that you are doing some good fighting it, might be a little misplaced. Granted as environmental issues go only Oil and Nuclear tend to make most environmentalists this upset. Nuclear Power may even surpass Oil. As environmentalism goes this issue is sexy... it is in ... it is now. It has all the right buzz words, Radiation, Uranium, Cancer, Melt down, Mining, and the biggest of them all Chernobyl, or perhaps in our western centric view, Three Mile Island. Despite the obvious appeal of fighting this issue, there are simply more important issues ... let alone ones that we as environmentalists can be more successful... than Nuclear Power.

-Facts

I am not going to stand here and tell you that mining Uranium and Nuclear Power plants do not have a negative environmental impact. They clearly do. All methods of power generation and all mining activity has a negative impact, but we must select the best way to

fulfill society's energy needs, while creating the least impact possible. And that IS Uranium.

All of the anti-Uranium mining literature that I have read discusses the negative impacts in absolute terms with no comparisons. My industry deals in very large numbers, numbers that may in reality represent something relatively small ... they sound big on their own. I read a brochure that discussed the radon gas released from the tailings dams at the Elliot Lake facility – never mind that this tailings damn would never receive a permit today- the radon gas is never measured per kWh of electricity. The Radon gas released from coal burned in the United States is never mentioned ... In absolute value or per kWh. Both coal and natural rock release more Radon gas than uranium. In fact, the majority of the radiation exposure that the workers at the Cameco refinery in Port Hope face (and they are exposed to Uranium ore all the time) comes from the radon gas in the basements of their homes. Uranium is just not that dangerous.

Uranium, outside of a reactor, releases alpha particle radiation - Ionized Helium. Alpha particles have significantly lower health impacts than gamma radiation. Any physical barrier, a plastic bag for example, blocks an alpha particle, even dead skin will likely

stop it. However, ingestion needs to be avoided. I have held a nuclear fuel pellet. It was in a thick plastic bag.

There are significant issues facing nuclear energy that could dramatically improve the environmental impact we make for every kilowatt-hour we use. Mainly waste disposal and reprocessing.

Canada is a signatory of the Non-proliferation Treaty and therefore we do not enrich uranium in Canada. The intent of this is so we do not produce nuclear weapons. However this prevents us from enriching our nuclear waste and putting it back in our reactors. The majority of our nuclear waste could be reused as fuel, reducing the amount we have to dispose and the amount we have to mine. Arguably the treaty isn't effective anyway. Iran and North Korea have nuclear weapons programs, while the real rogue nations like Canada aren't allowed to effectively use their Uranium for electricity.

As far as the waste goes, the solution is simple, it came out of the ground, it should go back in the ground. We do not make uranium radioactive, it is like that when we get it, uranium is in the ground anyway. The government currently places too strict parameters on burying the waste. To be clear about this we are not talking about

putting it in a six foot grave. We are talking about burying it in inactive (or active) mines that are in impermeable rock significantly below the water table. Currently the requirement for permitting is that it must be placed in an uncracked excavation with certainty that the excavation will not have any cracks produced for 10,000 years. That is not physically possible and never will be. That is not how geology works. However, high ground stress conditions only allow water to be in rock to a certain depth. We have mines that are below these depths. Holes in the ground are already available below the water table so there is nothing to become contaminated. Nothing is alive down there. It is safe. To be redundant we could only place waste in backfill going into Uranium mines, at radioactive grades similar to the ore. Though uranium is better than available alternatives, the current political structure still makes it more harmful than is necessary. Let's place it in context with other energy sources.

-Contextualize

Renewable energy does not automatically mean environmentally friendly. It means energy is removed without affecting the systems ability to produce energy later. Hydro power is renewable and not environmentally friendly. Geothermal energy is environmentally

friendly but it is a finite resource.

Even proponents of environmentally friendlier energy sources have to concede that they are not capable of being the primary energy source. When appropriately applied they can be a good addition to the primary source, but only hydro, coal and uranium can be the primary energy source. I was at a ski resort in Colorado that advertised that their chair lifts were powered 100% by wind power. Best case it was creative accounting, worst case it was fraudulent advertising. They purchased wind power credits from a company in Wyoming that equaled their energy use for the year. This means that significant amount of the energy they used would be created through other methods, likely coal in the American mid-west. Though they finance wind power, they do not consume it. It promotes a false fact that wind power is viable, and that we use dirtier energy methods for purely economic reasons.

Only coal, hydro and nuclear are viable primary energy sources. Hydro is only available in certain geographical jurisdictions. So the anti Uranium lobby is by default advocating the use of thermal coal. Which not only releases greenhouse gases but also releases more radioactive material than nuclear energy.

pause

Frame the Issue

So where should we move our focus to protect the environment?

Well, why don't we find a more important issue to deal with? Ethanol ... I'm fully aware that corn isn't nearly as sexy an issue to rally against than Radioactive Waste, never mind that agriculture has a greater environmental impact than mining, or that Ethanol has a lower energy density- just over half of that of gasoline.

Well, what about hybrid cars? They feel green, they're supposed to be green, but recent reports say that from cradle to grave, a Prius is more environmentally harmful than a Hummer H3. The jury seems to still be out on the hybrid car, but hey, we should still own them because they burn less gas so any environmental damage is hidden and we don't have to feel responsible for it.

But why let a little thing like Science stand in your way. ... Renewable Energy and Hybrid cars must be more environmentally friendly than Nuclear and Oil, because it simply feels like they should be.

Surely no one here would mean to suggest that building a 500 MW thermal coal electrical power plant every week is less harmful than 3 nuclear plants operating in Ontario. But China IS building a 500 MW Coal power plant, every week, and yet you all gather here to protest the three nuclear power plants in Ontario. Well maybe China is too far away and you feel your protests will fall on deaf ears.

I would suggest WE as environmentalist have been overlooking another issue. One we can change. One where we can succeed ... Street lights. I assume most of you have seen the David Suzuki ad where he has the fat guy change his porch light bulb to a fluorescent bulb., ok some environmental good is done there. Every house's porch lights come on, feel good music is playing, the street lights come on- street lights with an even lower percentage of their light pointed to the road it is supposed to light-, the only problem is it appears to be mid afternoon, and David Suzuki the so called environmentalist, has just implicitly told you that it is ok to waste electricity using poorly designed lights, at all times of the day, as long you use a fluorescent bulb. You are here coming after AECL, Cameco, Ontario Power Generation, Bruce Power, yet David Suzuki, the Wolf in Sheep's clothing ... him you

leave alone.

Street lights are not nearly as sexy ... don't sell nearly as many headlines as the big bad radioactive waste. Let' just forget about science while we all give in to our fear mongering.

If you have every driven down the 400 to Toronto, you know you can almost see Toronto's street lights as far away as Barrie. Light Pollution ...Needless electrical waste. The standard street light as it is designed with a flagrant disregard for geometric efficiency ... forget about the inefficiency of the light bulb, Geometry alone makes them waste large amounts of power. A street lamp was designed before the ideas of light pollution and energy conservation were around and it hasn't been revisited. You want to help the environment, create a public outcry over street lights. It would be simple enough to change the design. I'm sure Toronto's Mayor David Miller would institute a policy to grandfather them in if even a small percentage of the population cared. So Care! Instead of creating a problem where there is not one. Even if there was it is not one you could hope to change.

Perhaps you all should be rallying around a relevant environmental issue instead of tilting at windmills ...