



The Precautionary Principle & Hydrofracking

What is the precautionary principle?

In 1998 a large group of scientists gathered because of mounting evidence of harm to wildlife. They developed what is called the Wingspread Statement, which summarizes the principle as follows:

“When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”

The Precautionary Principle has been around in our shared wisdom for a very long time, passed down for generations as common sense: “Better safe than sorry”, “A stitch in time saves nine”, “Look before you leap”. The Hippocratic Oath for medical doctors embodies the concept- “First do no harm.”

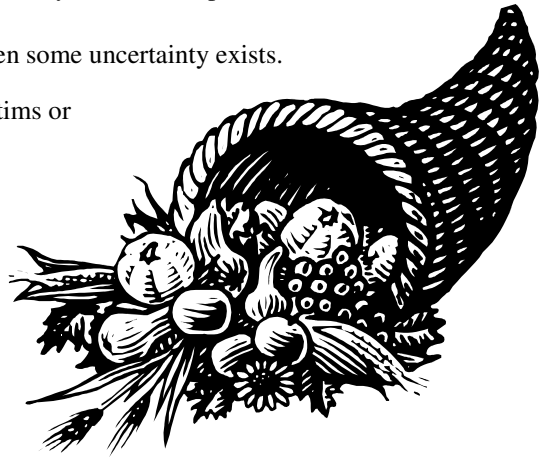
The entire field of Public Health, including Disease and Injury prevention, focuses on taking actions to protect the public from harm—preventing harm rather than treating the harm later. Public health is advanced by measures to protect our air and water, and the environment in which we live.

The precautionary principle should serve as a guide to making wise decisions when some uncertainty exists.

How should the principle be implemented?

- Place the burden of proof on proponents of an activity rather than on victims or potential victims of the activity
- Require Safer Substitutes and Solutions
- Prohibit the use of persistent, bioaccumulative toxins and other highly toxic chemicals
- Act on Early Warnings
- Require democracy and transparency for decisions affecting health and the environment. Give the public and workers the full right to know and participate.
- Take Action to protect communities and workers.

Beyond human health, the health of our natural world also needs protection as future generations will be dependent on the environment we leave them.



The Precautionary Principle is relevant to Hydrofracking.

Hydrofracking is a new technology that involves both vertical and horizontal drilling, massive amounts of freshwater, large quantities of toxic chemicals and the production of waste waters which must be disposed of in a way that does not further harm the environment.

The key issue here is that for New York State we are talking about a new technology or activity. If the NYS DEC used the precautionary principle in making its decision about hydrofracking, it would place the burden of proof on the proponents of the activity, the gas companies, to prove the safety of the entire process and all ancillary activities.

Proving safety would cover a lot of territory, given the record of significant damage and harm in other states that have allowed hydrofracking. While there are many unknowns regarding hydrofracking, there is now an extensive record of acute events, like explosions as well as extensive ecological harm associated with spills. Proving safety must cover all issues involved: toxic chemicals, contamination of precious water supplies and waterways, reduction in water availability for other critical uses like agriculture, fires & explosions associated with methane including at storage locations and pipelines, toxic air emissions, climate change impacts, as well as increased earthquake activity.

A government agency, operating under the Precautionary Principle, should use science and the accumulated weight of evidence, to decide to ban or prohibit an activity or technology, which has not been proven safe and therefore poses the potential for harm.

Under the Precautionary Principle, Hydrofracking poses significant potential for harm and has not been proven safe. Therefore, it should be prohibited in New York State.

Hydrofracking is really about large corporations using money and power to exploit the environment and maximize profits. Oil and gas companies make billions of dollars of profits just in a quarter of year. They are so wealthy that they receive subsidies from all of us as taxpayers. They are so wealthy that they have bought themselves exemptions from almost all important US environmental laws, through payments to friendly Congress members. Deregulation has become a mantra for many politicians and the deregulation of the financial industry and banks was the root cause of the worst economic collapses since the Great Depression. Deregulation of fossil fuel industries surely contributed to the coal mine disaster and the Gulf oil spill in the same year. Given the power these corporations wield, it is difficult for a State agency like the State Department of Environmental Conservation to resist the pressure and influence of the oil and gas industry. It is even more difficult when that Agency has suffered disproportionately severe budget cutbacks for many years and has now largely turned to allowing industries to regulate themselves. The DEC is a state agency under the executive branch of state government and accountable to Governor Cuomo who continues to support fracking. It is disturbing that the Koch Brothers, major players in the gas industry, have given Cuomo's campaign \$92,000.

Hydrofracking and Benzene

Benzene is a known human carcinogen.

Exposure to benzene has been limited by the regulation of benzene content in fuels.

However, oil and gas companies engaged in drilling are exempted from most federal environmental laws. Some fluids used for fracking can contain 93 times more benzene than found in diesel fuel. A single fracked well could contaminate over 100 billion gallons of drinking water. (The Environmental Working Group, 2010, cited in *The Case for a Ban on Gas Fracking*, Food and Water Watch, June 2011.)

Occasionally large oil & gas corporations have been held accountable by the courts for extensive environmental damage, as in Nigeria and Ecuador.

Unfortunately, even large settlements of money cannot repair damage and restore a healthy environment when very long time frames and slow natural processes are needed for restoration.

However, even if there are no federal laws, to stop dangerous hydrofracking, **New York State does have environmental laws that specify, “it is the policy of the State of New York to conserve, improve and protect its natural resources and the environment ... to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations.”**

We could be mistaken, but it sounds to us like the Precautionary Principle has already been embodied in NY’s Environmental Law. We recommend upholding and enforcing the Law rather than allowing the widespread poisoning of the State and New Yorkers.

Nuclear Danger: How safe are New Yorkers?

Last March, an earthquake started core meltdowns and a tsunami knocked out backup generators at the Fukushima Daiichi Nuclear Plant just 160 miles North of Tokyo in Japan. A harrowing nuclear catastrophe ensued. Without these generators, Fukushima was literally powerless to respond to a cascading series of disastrous events which resulted in fires, explosions, and meltdowns at three of the six reactors on the site. This catastrophic event led to evacuations, increased public mistrust of the nuclear industry and government regulators, and harmful radiation releases, which are ongoing. This disaster has highlighted concerns over nuclear safety and regulation at reactors in the United States, especially reactors that have the same design as the reactors that melted down at Fukushima. New York State's six nuclear reactors are particularly vulnerable to 4 problems: Earthquake potential, Mark I Reactor designs, overcrowded spent fuel pools, and effects of aging on reactor buildings and equipment.

Indian Point lies on top of the juncture of two earthquake faults.

Indian Point's Unit 3 reactor has been ranked by the Nuclear Regulatory Commission (NRC) as having the highest risk of earthquake damage out of *any* other reactor in the United States. This is particularly concerning because new evidence suggests that after the earthquake the Fukushima plant began emitting radioactive material. Scientists from across the globe believe that the earthquake may have caused structural damage to the reactor *before* the tsunami even reached the coast. The Indian Point 3 reactor, which lies only 24 miles north of New York City, poses significant risk to over 20 million people. The Northeast earthquake in August of 2011 highlighted the need for a close look into the seismic threat earthquakes pose on nuclear facilities, like Indian Point.

Mark I Reactor Design

New York State has two reactors that have the same design, the GE Mark I design, as the reactors that failed at Fukushima. This reactor design has two major flaws, both of which heightened the severity of the disaster. Firstly, Mark Is have small containment vessels which are incapable of containing a radioactive release in the event of an accident. These containment structures have been retrofitted with vents to allow the release of gas and radiation in order to prevent an explosion. However, at Fukushima these vents failed. Gasses quickly built up in this small containment structure and resulted in explosions that destroyed the outer containment buildings. Both Mark I and Mark II reactor designs have elevated spent fuel pools. Spent fuel is nuclear fuel that has been used in a reactor but can no longer maintain a nuclear reaction; it remains highly radioactive and continues to generate extreme heat. These types of spent fuel pools are dangerous because they are elevated above the reactor core. The explosions that occurred in the containment buildings at Fukushima exposed the elevated spent fuel pools to open air which lead to huge radiation releases. Elevated spent fuel pools are very vulnerable to loss of coolant and loss of electricity in a station blackout. Nine Mile Point 1 & Fitzpatrick are Mark I designs, while Nine Mile Point 2 is a Mark II reactor design with a somewhat larger containment.

Overcrowded Spent Fuel Pools

New York's spent fuel pools contain some of the highest concentrations of radioactive fuel in the country. Because there is no permanent disposal facility for this high level waste, the Nuclear Regulatory Commission (NRC) has allowed increasing storage quantities to be stored in these pools. For example, the spent fuel pools at the Fitzpatrick and Nine Mile Point reactors rank 7th in the country for amount of radioactive waste stored on site. One of the greatest risks involving spent fuel pools is the potential for a fire in the pool. The more spent fuel rods stored in the pool, the greater the consequences of a spent fuel pool fire. Nuclear experts and members of the public are calling on the NRC to move spent fuel into dry casks, hardened on-site containment because overcrowded pools pose significant risks to public health and safety.

Aging reactors are being run into the ground!

Reactors were originally built to last just 40 years. Expecting them to last 60 or more years is just inviting disaster. And New York is home to two of the oldest nuclear reactors in the country – Nine Mile Point 1 and Ginna. All but one of New York's reactors are over 30 years old. A recent Associated Press investigation highlighted various problems at nuclear plants that were attributed to aging, including cracking tubes, and nozzles, failed cables and leaky valves. And now, some of these old reactors are being uprated, meaning that the maximum power level at which the power plant can operate is being increased, despite having many age-related problems. Over the past sixteen years, 5 out of the 6 nuclear reactors in New York have been uprated; both Indian Point reactors have been uprated twice and the Ginna Plant received an "extended power uprate", an up to 20% increase in power. This poses various safety concerns. An uprate increases the temperature of the reactor and in turn increases the time it takes to cool the reactor during a shutdown. Additionally, uprates increase stress on pipes, nozzles, and valves, the same degraded equipment that AP highlighted in its investigations.

NRC should receive a failing grade

The NRC has been operating as a lapdog for the nuclear industry and is continuing with business as usual despite the enormity of the Fukushima disasters. There are four areas where the NRC has failed to take action to protect the public:

- The NRC has refused to delay Indian Point relicensing. The NRC should delay relicensing activities until all lessons are learned from Fukushima.
- The NRC has not acted on a petition to close all of the Mark I reactors in the US.
- The NRC has taken no action to reduce overcrowding in spent fuel pools by moving spent fuel to hardened on-site storage.
- The NRC has not taken action related to aging problems with nuclear reactors.

The NRC has failed to perform its job as a regulator of the nuclear industry.



Watch for 2 New Reports in November.
And visit our website to see the new
video 'Story of Broke' by Annie Leonard.
www.cectoxic.org

The two new reports cover : 1) Subsidies for Waste Incinerators & 2) Jobs associated with Waste Management options. Annie Leonard was a hit with the *Story of Stuff*. Her next video is the *Story of Broke*.

We are the 99%!

We work, raise families, and pay taxes. Our tax dollars support a variety of government programs that benefit all of us-- education, transportation, water & sewer systems, public parks, safe food and products. These things are all lumped together as Social programs, along with Medicare & Social Security. Some public officials are cutting social programs while providing tax breaks and subsidies for large corporations. Some turn a blind eye to tax dodgers and cheats and those who ship our jobs overseas. Billions of dollars are hidden in offshore bank accounts.

We would not be in our current economic crisis if it were not for reckless and irresponsible financial speculation and chicanery. No one has yet calculated the total economic damage caused by the titans of Wall Street-- the damage fell on the working class, not the upper class. The Federal Reserve gave the banks and financial institutions 16 trillion dollars with almost no accountability. Yet, now we are being asked for cuts to essential programs -- the only programs that benefit the public at large-- the 99% of us!

As the debate continues, remember that protecting our environment is a social program that benefits us all.

Green Chemistry Advances

Green Solutions have been growing by leaps and bounds. One key growth area is in green chemistry-- chemistry that offers promise for our current toxic dilemma. We need to educate the younger generation that toxic chemicals are not necessary, that safer solutions are available. The DEC will be conducting green chemistry pilot programs at four high schools around New York State. Liberty High School in Sullivan County was the first school to host a green chemistry workshop aimed at educating science teachers on how to use the principles of Green Chemistry in their classrooms. This workshop drew a large crowd with participants representing 19 school districts and 11 counties, highlighting the growing interest in Green Chemistry. There was a waiting list for the program.

Also, on September 23rd the EPA Region 2 hosted a Green Chemistry workshop in NYC to promote green chemistry, exchange ideas, and showcase projects and innovations. This event attracted professionals from the fields of public health, the environment, business, and education.

Incinerator Update: PSC to make decision in November

Waste Incinerators produce Dirty energy in the form of toxic air pollution and toxic ash that needs disposal in landfills. They produce energy by destroying the materials in the waste stream that could be better used to make new products. New Yorkers pay a charge through their utility bills to support clean, renewable energy including energy efficiency, solar and wind projects. Covanta, an incinerator company, wants to obtain renewable energy credits for its dirty energy from New York State. If we give renewable energy credits to Dirty Energy, New Yorkers lose in two ways-- we get more Dirty Energy and the fund for clean, renewable energy will be depleted, so fewer Clean Energy projects will be built.

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