

Comments on the Proposed Coal-fired Power Plant in Surry
County, Virginia

Presented at Public Meeting on Surry Power Plant

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Good evening. I am an environmental scientist, chair of the Advocacy Committee of the American Lung Association of Virginia, and an independent environmental consultant. I also hold a part-time faculty position in the Center for Environmental Studies at Virginia Commonwealth University in Richmond, VA.

The comments I make this evening are my own, and have not been circulated at the ALA for approval.

During my environmental career, I have held full-time faculty positions, worked for non-profit environmental groups, and served on the boards of environmental groups, including the Virginia Conservation Network. I consider myself a full time consultant, providing technical analysis and advice on the cleanup of contaminated sites and on sources of contamination in communities around the country. I work for communities like yours helping them deal with the cleanup of industrial plants, sometimes listed by the EPA as Superfund sites. My experience includes work on coal-fired power plants from the perspective of

identifying threats to human health and the environment. I have visited communities that are impacted by coal mining and transport and coal-fired power plants.

Tonight I will talk about the sorts of health problems we can anticipate from coal-fired power plants.

I will give you an overview of the types of health problems that can result. Then Dr. Llewellyn will talk about more specific health problems that she and I are concerned about and anticipate as serious issues for this plant in this community. Looking at the whole set of operations that go on at such a facility, there are releases into the community from various sources:

1. Emissions from the stack
2. Coal dust from operations – they move, store and burn
3. Transportation of coal, including the fumes from trains and trucks
4. Increased truck traffic during construction and operation
5. The coal pile- leachate into local waters, etc.
6. Coal ash – contains mostly heavy metals and we've heard about this problem locally here with the golf course built on top of coal ash that is now contaminating the ground water around the course.

It's important to know that coal is more than carbon. Coal contains a large number of elements found in the earth and that

are found in plants. Plant matter from millions of years ago is what makes up coal. All the materials, including metals that were once present in small amounts in plants, are now present in coal. And the levels are higher than in the original plants. But because so much coal is put through a coal fired power plant, even trace amounts add up to substantial loadings of these pollutants into the community.

We are not going to talk much about problems and issues that affect other communities, the state and the rest of the world. I do, however, need to mention that there is another community like yours with wonderful people, but in the mountains – at the other end of the coal train.

Roda is a small town much like Dendron that is just past the entrance to a coal mine. The trucks rumble through this one-street town all day long, spewing coal dust and dust from the mining operations. The dust is so thick that it has discolored the paint on their homes and makes it impossible for the residents to sit outside on their porches and enjoy their community. Issues like these in Roda and other communities affected by coal operations are the result of the following:

Emissions such as:

Carbon dioxide, which causes global warming. There is no doubt about it, we all have to do our part to save ourselves from ourselves.

Carbon monoxide. This gas is a priority pollutant because it is immediately poisonous- carbon monoxide is what we are all warned about with automobile exhaust and other sources of heat that burn- many homes now come equipped with sensors. Carbon monoxide prevents your blood from carrying oxygen.

Particulate matter- Particulate pollution is the small particle pollution from all sorts of sources and is a major health problem in the US today. There are two levels of particle pollution- large particles and fine particles. Health researchers have come to understand that there is no safe level of particle pollution, especially fine particles (like a few other pollutants we will mention tonight). No matter what the concentration, someone is going to be harmed. And we know that the people most sensitive to this pollutant and several others are those who can least protect themselves- the youngest, the oldest and those of us who are infirm.

Nitrous oxides- These gases are formed when nitrogen is burned and they are ozone precursors, respiratory irritants, form acid rain in part, and are a major source of pollution in the Chesapeake Bay and all coastal waters of the US and several other countries

Sulfur oxides- Burn sulfur and you get sulfur oxides, among other things and these form acid rain, cause respiratory irritation, and form sulfuric acid in vapor form.

Acid vapors- Most of the acidic vapors here are from sulfuric acid. This pollutant is a respiratory irritant that can and will increase the onset of other symptoms.

Volatile organic chemicals - These are toxic chemicals that can cause a range of respiratory problems, kidney ailments, liver disease, and other health problems. These compounds are similar to the ones that originate from gasoline.

Lead- Lead is a potent neurotoxicant that I hope all the members of the audience will know about. It poisons our children and causes permanent brain damage. Lead poisoning is still a problem today, though most of the source is old lead paint and very old pipes. Still lead from air emissions will contribute to the effects.

Mercury- This metal is another potent neurotoxicant that affects children in much the same way that lead affects the developing brain. Mercury pollution affects 12 rivers in the eastern part of Virginia from air emissions and the bulk of the air emissions are from coal fired power plants (other sources are incinerators, steel mills, some industrial facilities). I did some work on this problem for the Virginia Department of Environmental Quality and can assure you that the problem is serious and persistent.

Arsenic- This element is a known carcinogen and causes kidney problems as well. Though it is not listed as one of the priority pollutants of coal-fired power plants, it is certainly of concern when it comes to human health effects.

Flourides- These are **organic compounds** that form toxic chemicals. Fluorides are respiratory irritants and are likely to cause liver and kidney defects as well.

Fugitive Emissions - The coal dust that is shipped to the plant can and will come off any equipment that transports the coal dust, which is called fugitive emissions.

Transportation

The trains and trucks that service this facility bring two sorts of pollutants: one is the exhaust or fine particles (measured as 2.5 microns) and the other is dust from the road, from fugitive emissions of dirt carried by all trucks. The increase in truck traffic will increase air pollution in the community and on the transport route. Heavy loads in trucks also increase their stopping time. Serious traffic accidents and unsafe conditions result from coal transport and trucks exceeding weight restrictions on local roads.

Coal Pile

Every coal-fired power plant of which I am aware has a pile of coal stored and waiting for use. In fact, the regulatory bodies may

require a certain stock pile of fuel to be sure that the facility will continue to operate as planned and expected. The coal pile is a source of dust (i.e. more fugitive emissions) and leachate. When it rains on the piles, rainwater transports breakdown products of the coal like metals and other pollutants. These products seep into the ground, run off into streams or collect in pools. The state of Maryland, I know, has been investigating this problem for some time- a friend of mine ran a program to fund investigations of this sort. The runoff from coal piles is acidic and contains many of the toxic chemicals found in the air emissions and in the coal ash.

Coal Ash

Coal ash is what comes out of the bottom of the burner when the plant has been burning coal. Ash contains heavy metals not unlike what is in the emissions- but far less mercury and more cadmium, nickel, lead, arsenic and boron. These metals are toxic, some are neurotoxic and all cause serious health problems- more so to children and those of us who are infirm.

We need to remember some wisdom that came to me from a minister – when we are in our prime health, we are only temporarily abled- one day each of us will have our health issues and physical limitations, even disability.

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