Special Report

The BIG Dirty

Is Centralia coal plant killing hundreds of Washingtonians?

By Craig McLaughlin

photos by Tim Crosby with Light Hawk Helicopters

Forty million years ago, the mouth of a major river covered the lowlands of Puget Sound. Layers of minerals and carbonized vegetable matter packed the bottom of the river delta, and today dozens of coal seams are embedded in the ground. Only a few, however, are worked as mines. They are all located halfway between Portland and Seattle, just a couple miles east of Interstate 5, near the town of Centralia.

Geologists call the largest seam "The Big Dirty." Its sister, buried nearby, is the Little Dirty. The seams feed a big coal plant next door — the Centralia Steam Electricity Generating Plant.

Each year, about 5 million tons of low-grade high-sulfur coal are ripped from Big Dirty, Little Dirty and a third seam, the Smith Seam. In places, the craters in the landscape are more than 400 feet deep.

As you pass the Centralia site, it's not the plant that attracts your eye as much as the gaping holes in the earth. Although the Centralia Mining Company has won numerous awards for its reclamation efforts, the amount of devastation is still astounding.

The pits are best measured not in football fields but in the number of football stadiums that can be dropped inside them. And what they bring up is G-grade subbituminous coal that turns out high levels of sulfur and low levels of heat.

When coal goes into the plant's giant twin maws, two things come out: as much as 1340 average megawatts of electricity, enough to power a city the size of Portland, and tens of thousands of tons a year of pollution.

The Centralia Steam plant is the leading air polluter in Washington in three major categories. It is also the second dirtiest coal plant in the Western United States.

But the Centralia Steam plant does not violate any applicable state or federal clean air standards. It broke no law in 1993, for example, when it produced 63,960 tons of sulfur dioxide, a feat of distinction nonetheless: the amount is 10 times greater than the state's next largest source, as well as half the sulfur dioxide produced in the entire state; and roughly 10 percent of all such emissions west of the Mississippi.

The plant's owners, led by the Portland-based utility giant PacifiCorp (Actually, PacifiCorp owns 47.5 percent of the plant, with the remainder shared by Western Water Power, Seattle City Light, Tacoma City Light, the Public Utility District of Snohomish County, Puget Sound Power & Light, Public Utility No. 1 of Grays Harbor County, and Portland General Electric), have told state regulators that the plant "does not contribute to emissions which would cause quantifiable human health effects" or other "measurable" impacts. These assertions have not met with any serious challenge from regulators or environmentalists — until now.

But now, new studies suggest the relationship between this coal facility and environmental and public health problems might be more serious than previously thought, and people are starting to take note.

Among them are regulators with the Southwest Air Pollution Control Authority (a branch of the Washington Department of Ecology). The air pollution authority, known as "SWAPCA," recently concluded in a draft regulatory order that the "Centralia Plant's SO2 emissions are having a measurable adverse impact on both air quality and sensitive plant life." In particular, SWAPCA suspects the Centralia plant's emissions may contribute to acid rain in and around Mount Rainier National Park, located some 75 kilometers to the east. SWAPCA is now proposing regulations that would reduce sulfur dioxide emissions at the plant, with a goal of avoiding "irreversible effects" later in Cascade lakes and forests.

SO2 and its derivatives are also known to cause problems for people with respiratory disorders. In some cases they can even kill. That may well be the case with this plant's emissions, a possibility that has been known to regulators since 1992, when Battelle Pacific Northwest Laboratories, a U.S. Department of Energy subcontractor at Hanford, examined these impacts in a federally funded study for the Bonneville Power Administration. Given the population density and air dispersion patterns within 80 kilometers, Battelle calculated 19.7 deaths and 677 illnesses each year from Centralia.

But the health problems caused by the plant might actually be greater. The region's population has soared since 1980,

the year Battelle used in its study; and SO2 goes high in the air after leaving the plant, and is carried by air currents, mostly northward, before it settles down, often more than 80 kilometers from the plant.

The city that would be most affected is probably Olympia, 20 miles north.

"Seattle will have more deaths from this plant than the city of Centralia," says Greg Bowers, a Seattle-based power planning consultant who formerly worked for the Federal Energy Regulatory Commission. Bowers looked at the same data that Battelle used, and factored in 1994 population data. The statistical death toll climbed to 117. When he expanded the study's geographic boundaries to include the whole Puget Sound area, he found the deaths from Centralia's sulfur dioxide were on the order of 230 per year.

But there may be even more to the picture. After all, SO2 isn't the only pollutant pouring out of Centralia's smokestacks. According to SWAPCA, the plant produced 25,167 tons of nitrogen oxides in 1993, more than seven times the second largest source in the state, and accounts for 8 percent of all nitrogen oxide emissions statewide. Nitrogen oxides are a major component of acid rain and smog. The plant is also the state's largest source of tiny particulate matter, known in Clean Air regulations as "PM10." In 1993 it produced 2,854 tons of PM10, twice the next highest source. Particulates can cause serious problems, including early death, for people with respiratory and cardiovascular disease.

Other emissions are also drawing attention. The plant's output of carbon monoxide in 1993 was 1,682 tons, putting it 16th on the statewide list. Even in low concentrations, CO contributes to increased mortality among people with heart disease. Among healthy people, it increases the risk of heart disease while decreasing tolerance for exercise and reducing mental activity.

"When you bring in all the damaging components," says Bowers, "you get deaths in the mid-300 range."

In addition, Kevin Bell, a Seattle-based energy consultant, says the plant produces 10 million tons a year of carbon dioxide, an amount equal to 70 percent of all the CO2 emitted annually by all the vehicles in Oregon. CO2 is a greenhouse gas and the leading contributor to global warming.

When Bowers gave his data to Seattle City Light and Snohomish Public Utility District, they agreed to take an independent look at his figures.

But PacifiCorp, in a June 21 letter to Bowers from Frederick W. Buckman, PacifiCorp's chief executive, says: "As you know, the ambient sulfur dioxide concentrations in the area around the Centralia Plant and the Seattle area are at levels that are far below the State of Washington and National Ambient Air Quality standards. We believe these standards are the appropriate guidelines to follow in establishing the operating policies for the plant."

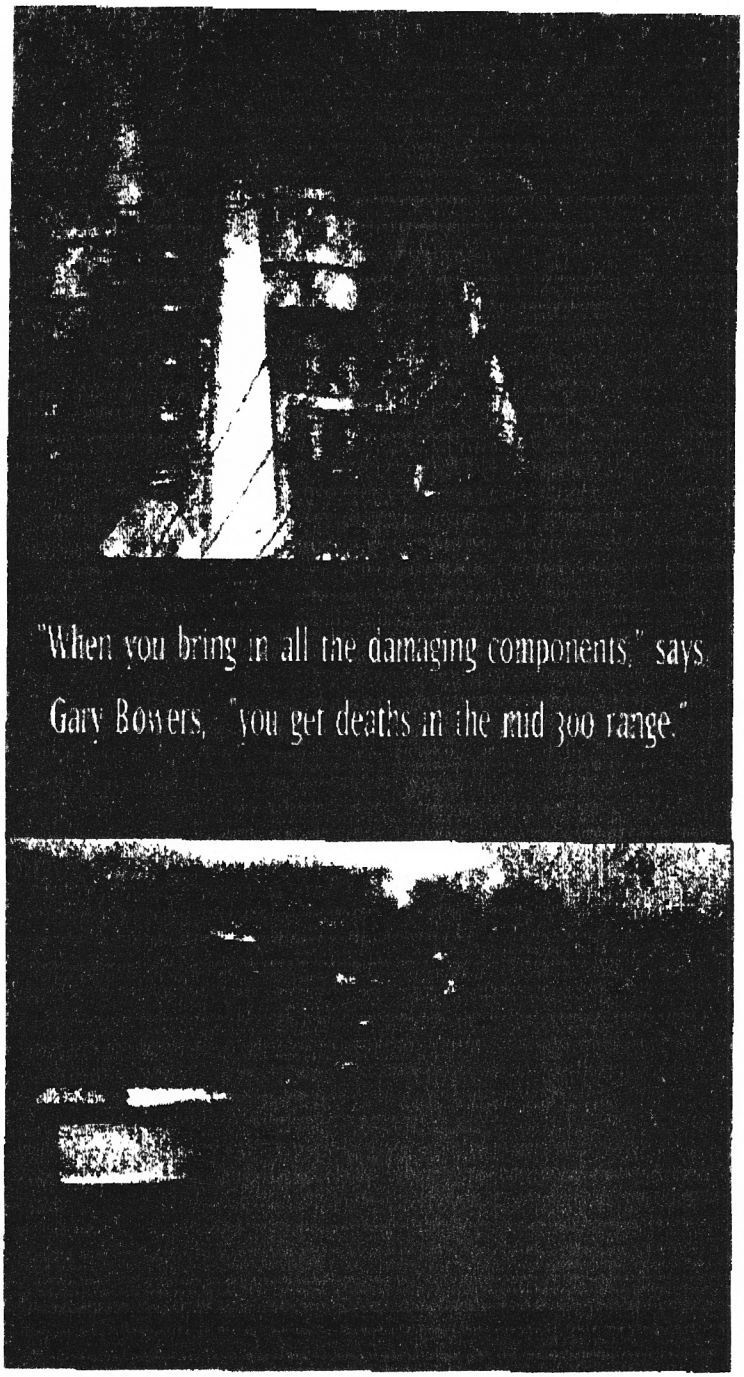
In other words, PacifiCorp contends that the plant is safe because it doesn't violate EPA standards. "The EPA sets health standards," says Centralia plant manager Rich Woolley. "I don't believe the plant is causing deaths in the region."

SWAPCA officials are not saying the plant is deadly, but they are proposing regulations to sharply reduce SO2 emissions. On Aug. 15 in Vancouver, Wash., SWAPCA will hold a public hearing on a proposed order that would require the plant's owners to maintain SO2 emissions below one pound for every million BTUs of heat generated.

The plant currently operates at 1.5 pounds/million BTUs.

Moreover, on Jan. 1, 2000, the plant will have to further reduce emissions in compliance with new federal regulations that will go into effect then. Those rules would set 39,338 tons as the maximum SO2 emissions the plant could release annually. If Centralia wants to go over that amount, the owners would have to transfer allocations from other plants, in essence importing someone else's pollution.

Violations of the annual limits will trigger annual fines of $2,000 per ton. To meet the SWAPCA standards, Centralia's owners must install emission-reducing scrubbers in the plant or import cleaner coal.



This discussion, however, begs a question a growing number of environmentalists are beginning to raise: Why run the plant at all? They contend the plant should be used only as a pinch-hitter when other plants go down or electricity usage spikes upward, as in a winter cold snap, if at all.

Last year, the plant ran at 83 percent capacity. But with the recent surge of low-priced electricity from new natural gas plants, the Northwest has a glut of power that can be produced by much cleaner — and cheaper — alternatives.

For example, utilities this year have been able to purchase electricity on the open market for a price that's about 40 percent cheaper than power from Centralia, based on numbers supplied by the company to the Federal Energy Regulatory Commission.

At the same time, new gas-fired cogeneration plants produce mere hundreds of tons of SO2 annually; and renewable energy from wind, solar and other sources is quickly becoming cost-competitive. Moreover, it is generally still cheaper to reduce the demand for electricity through conservation programs than to generate increased supply.

Others, however, note that the plant is strategically located on the west side of Washington where the population is greatest and the winter demand for heat is highest. And it isn't dependent on unreliable rain and snow levels.

"Strategic planning of power resources necessitates that this plant remains a viable resource," said Steve Mrazek, an air quality engineer for SWAPCA. "It does diversify the power supply. If you have a natural gas pipeline explosion, you still got coal. In bad water years, you still got coal."

"That's not an argument for keeping it running," retorts Jim Lazar, an energy economist in Olympia, Wash. "That's an argument for keeping it in ready reserve."

Lazar sees Centralia as a proving ground for a resource allocation system called "environmental dispatch" that would require utilities to look at environmental costs as well as economic cost when deciding which plants to run at what levels.

"If they used environmental dispatch, Centralia wouldn't run," says Bell.

If Centralia wasn't a "mine to mouth plant" with a power generation facility right there, PacifiCorp would be hard-pressed to find a market for the coal. SWAPCA may force the mine's closure anyway, if the plant can meet future air quality targets only by importing cleaner coal.

But as Woolley, the plant's manager, indicates in an April 19 news release, the owners are not interested in shutting the mine down. "We believe that keeping the mine open is in the best interests of everyone. The local community would retain 500 jobs and the state would retain significant future tax revenues from the mine."

Alternatively, the plant could reduce SO2 emissions by half if scrubbers are installed. SWAPCA is proposing a package of tax breaks and low-cost financing to make scrubbers more affordable.

Environmentalists, however, say the proposals don't go far enough.

"I think it's insane that we're not doing everything we can to reduce pollution from the plant," said Rhys Roth, co-director of the Atmosphere Alliance in Olympia. "We know that we have major climate shifts around the globe and that we are seeing an increase in respiratory diseases and unexplained cancers, and we know Centralia contributes to all these problems."

Rachel Shimshak, director of Renewables Northwest, a Portland-based advocacy group, says conservation programs and renewable energy technologies could offset much of the power lost by reducing the region's reliance on Centralia.

"I think the Northwest has prided itself on its quality of life," she says. "And part of that quality of life is based on affordable energy. To the extent that we can move toward environmentally sound renewable resources and away from more polluting fossil fuel resources we'll all be better off."

Craig McLaughlin, a former editor of the San Francisco Bay Guardian, writes from Olympia.