

# BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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March 08, 2004  
1828 Brandon Ave. SW  
Roanoke, VA 24015

Laura Justin  
VA DEQ - Valley Regional Office  
P.O. Box 3000  
4411 Early Road  
Harrisonburg, VA 22801

Dear Ms. Justin:

## **Comments regarding PSD permit for CPV Warren LLC 580 Mw gas-fired power plant, registration number 81391**

I am submitting comments on behalf of both the Board of Directors of the Blue Ridge Environmental Defense League (BREDL) and the Steering Committee of Virginia Forest Watch (VAFW). BREDL is a regional, community-based, non-profit environmental organization. Our founding principles are earth stewardship, environmental democracy, social justice, and community empowerment. BREDL has chapters and members throughout the southeastern United States, including Virginia. VAFW is a grassroots based coalition of individuals and environmental groups organizing throughout the Commonwealth of Virginia. Our mission is "to maintain and restore the natural ecology and biodiversity of woodlands across Virginia through education and citizen participation." BREDL and VAFW members may submit additional comments.

## **CUMULATIVE IMPACTS**

Despite the provisions of the Virginia Constitution and the Virginia State Code, we feel that significant issues and cumulative impacts are still not being fully addressed by the Virginia Department of Environmental Quality regarding new and proposed power plants. For instance, instead of assessing the impacts from hazardous air pollutants, Virginia amended the regulations in 2002 to exempt power plants from the toxic rule. Modeled ambient air concentrations of several hazardous air pollutants including benzene, formaldehyde, and 1,3-Butadiene are well above the health benchmark for cancer.<sup>1</sup> Unlike the polluted summer air around the Shenandoah National Park, it is clear that Virginia has not taken steps to protect the air quality of the SNP and Virginia as a whole.

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<sup>1</sup> EPA Cumulative Exposure Project, 1996

Section 1 of Article XI of the Virginia Constitution states “it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.”

Virginia State Code § 10.1-1186.2:1.(A) specifically gives VA DEQ “the authority to consider the cumulative impact of new and proposed electric generating facilities within the Commonwealth on attainment of the national ambient air quality standards.”

## **IMPACTS**

The proposed CPV-Warren facility will be within 7Km of the Shenandoah National Park. SNP is considered the second most polluted National Park in the United States based on monitoring data from 1991 - 2001.<sup>2</sup> SNP is suffering severe impacts from haze, ozone, and acid precipitation. SNP visibility during the summer months is down to only 15.4 miles. In comparison, the Rocky Mountain N.P. visibility is 78.1 miles, Yosemite is 64.3 miles, and Great Smoky Mountains is 14.4 miles.<sup>3</sup> This area does not need an additional major source of pollution.

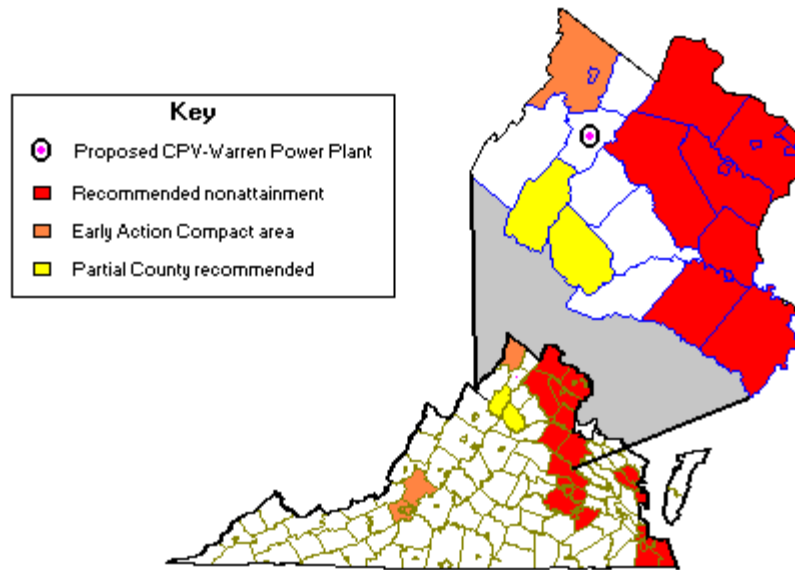
The CPV-Warren power plant will be sited in the middle of areas struggling to meet the new 8-hour ozone standard. While EPA will not make the final designations for 8-hour ozone until April, we already know which areas are being recommended as nonattainment by EPA. Just south of the proposed facility will be the Shenandoah National Park nonattainment area consisting of portions of the counties of Page and Madison. To the north is the Early Action Compact area of Frederick County and the city of Winchester. East of the CPV-Warren plant would be the severely ozone impacted Washington DC area. No matter which way the wind decides to blow on a given day, an area that currently can not meet the health standard for ozone will have ozone forming pollutants infest its air.

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<sup>2</sup> Code Red: America's Five Most Polluted National Parks, Appalachian Voices

<sup>3</sup> Ibid.

**CPV-Warren Power Plant would be sited in the middle of areas struggling to meet the 8-hour ozone standard**



The Southern Appalachian Assessment found that the area where CPV-Warren will be located is one of the areas with the greatest frequency of growth reduction from ozone exposures. From 1983-1990, this northwestern Virginia area (along with the northeastern Alabama/northwestern Georgia area) showed the greatest potential ozone damage.<sup>4</sup>

In addition, the EPA has found that the eastern portion of the U.S. is most at risk from continued acid deposition. The targeted areas were the lakes and streams of the Appalachian Mountains.<sup>5</sup> The rate of acid deposition in Virginia's mountains is among the highest in the country. From 1985 through 1997, nitrogen oxides from stationary and mobile sources have increased by 50 percent.<sup>6</sup> Increases in NOx emissions, even if not sustained, can have severe impacts.

“Recent declines in fish population and species diversity indicate, however, that episodic acidification is taking its toll. In a University of Virginia study on trout reproduction in the Southern Appalachian Mountains, researchers found nearly 100 percent death in the trout eggs and newly hatched fish after a severely acidic rainfall and steep increase in stream water acidity. This sharp acidic surge, due to acidic rainfall, altered stream chemistry, resulting in conditions fatal to fish at young and vulnerable stages.”<sup>7</sup>

A study conducted by Trout Unlimited and analyzed by University of Virginia scientists shows that many of Virginia's streams continue to suffer from acid rain. It showed that the number of

<sup>4</sup> Southern Appalachian Assessment, Atmospheric Technical Report, July 1996, p. 5

<sup>5</sup> Acid Deposition Standard Feasibility Study, Report to Congress, EPA, 1995

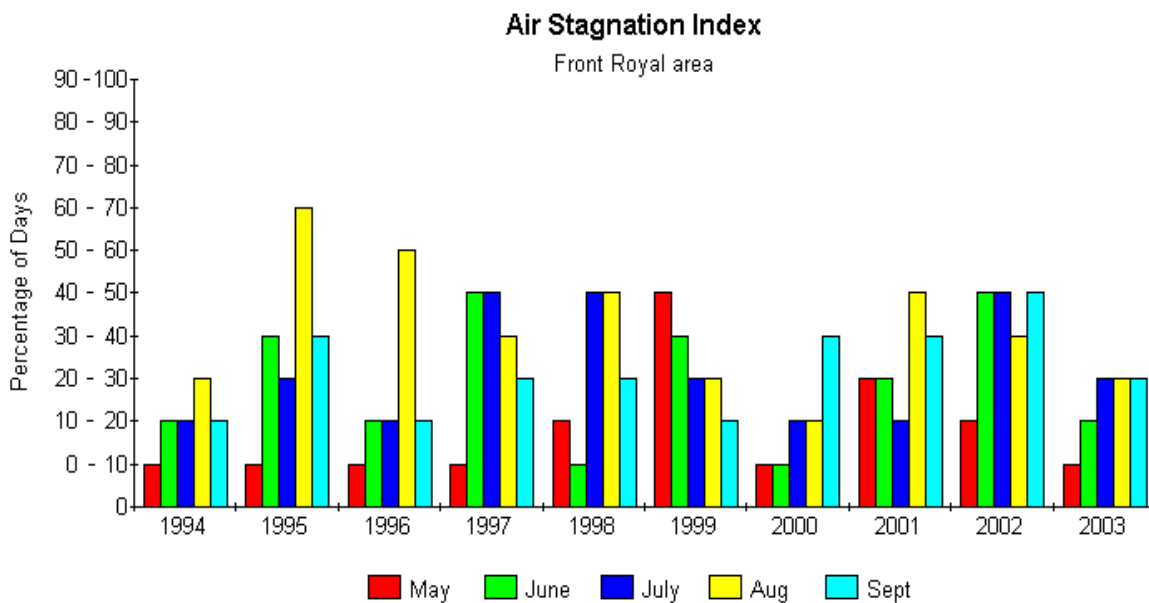
<sup>6</sup> Power That Pollutes: A Status Report on Virginia's Outdated Power Plants, Southern Environmental Law Center/The Izaak Walton League, p.1, April 2000

<sup>7</sup> Trout Unlimited, 1998

“chronically acid” streams increased and will continue to increase. The number of dead streams is expected to more than double in the next 40 years.<sup>8</sup>

According to the Southern Appalachian Mountains Initiative (SAMI), “the southeastern United States has more frequent episodes of air stagnation than most other areas of the country. During these periods, pollutants can remain over the mountains for several days at a time. The naturally high humidity of the area magnifies the haze generated by airborne particles.”

Based on the last 10 years of Air Stagnation Index maps from the National Climatic Data Center, the Front Royal area averages from 20 to 30 percent stagnation days during the May to September months. According to the NCDC, “stagnation is considered to consist of light winds so that horizontal dispersion is at a minimum, a stable lower atmosphere that effectively prevents vertical escape, and no precipitation to wash any pollution away. These conditions are most frequently met when there is a persistent or slow moving high pressure system.”<sup>9</sup>



It only requires a small amount of common sense to realize that when an area is suffering such significant impacts, the very last thing that is needed is another source of pollution. Instead the SNP is being bombarded with New Source permit reviews. U.S. National Park Service tracking data reveals that the Park Service has reviewed over twice the amount of permits for the Shenandoah National Park. From January 1987 to December 2000, the Shenandoah National Park officials have reviewed over 75 permits. The Everglades National Park has reviewed only 35 permits and the Great Smoky Mountains National Park just under 30 permits.<sup>10</sup> Since December 2000, SNP has received more than 15 new proposals. Unless Virginia has a goal of

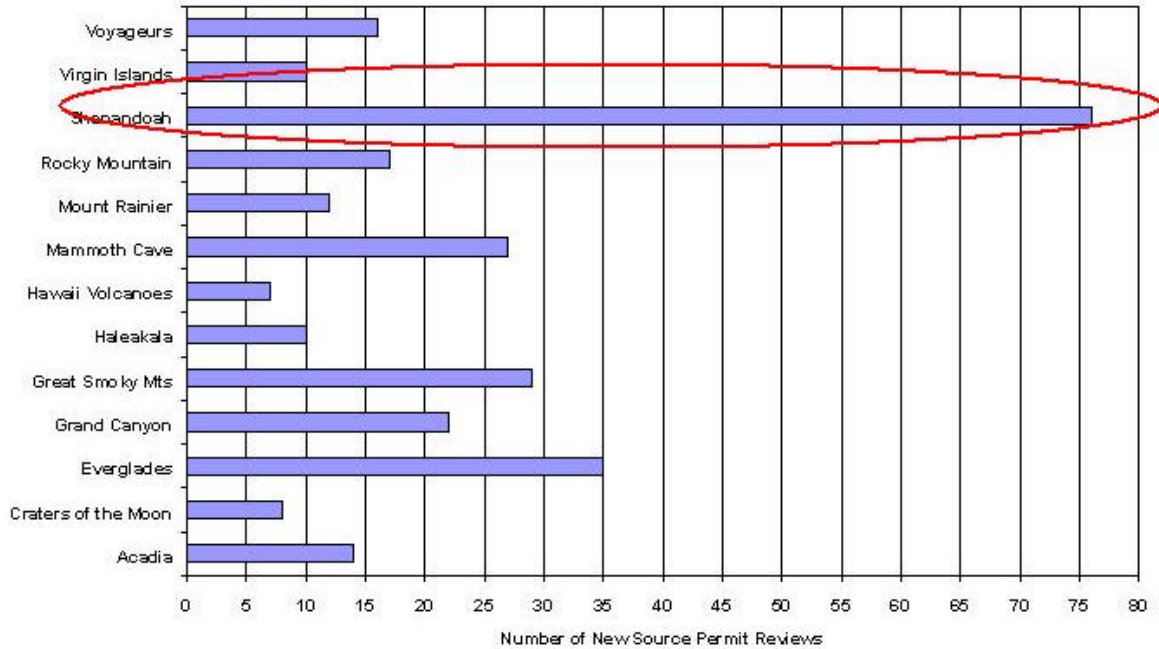
<sup>8</sup> Virginia Trout Stream Sensitivity Study, Trout Unlimited, October 2000

<sup>9</sup> <http://www.ncdc.noaa.gov/oa/climate/research/stagnation/stagnation.html>

<sup>10</sup> Tracking graphic provided by U.S. National Park Service

the SNP becoming the most polluted national park in the country, we are definitely heading in the wrong direction.

**National Park Service New Source Permit Reviews by Park  
January 1987 - December 2000**



We are also concerned about criteria and hazardous air pollutant emissions and impacts to human health. Recent studies have linked ozone and particulate matter pollution to lung and heart disease (see attachment). According to the “Indicators of Healthy Communities Report 2003”, in 2001, the heart disease death rate in Virginia was 206 per 100,000. According to the Virginia Department of Health, diseases of the heart include hypertensive and cerebrovascular diseases, atherosclerosis, and other diseases of the arteries, arterioles, and capillaries. The asthma rate mentioned in the chart below is based on hospital discharge information categorized by zip code. The report’s authors caution that the “level of admissions may indicate access to health care issues, lack of insurance, few options for service, or the presence of social issues that can influence patient adherence to medical regimes (homelessness, inconsistent caregivers, etc).”<sup>11</sup>

<sup>11</sup> “Indicators of Healthy Communities 2003”, The Virginia Center for Healthy Communities in collaboration with the Virginia Hospital and Healthcare Association. <http://67.92.69.86/atlas.aspx>

**2001 Heart Disease rate/Asthma Hospital admissions  
(per 100,000)**

<b>Locality</b>	<b>Heart Disease /100,000</b>	<b>Asthma /100,000</b>
Clarke	275	236.44
Fauquier	197	141.82
Frederick	206	256.05
Loudoun	99	138.29
Page	349	258.68
Rappahannock	333	124.69
Shenandoah	234	158.99
Warren	250	102.01
Winchester	323	501.22
Virginia	206	176.29

- "Indicators of Healthy Communities 2003"

**POINT SOURCES**

CPV-Warren will be one of the areas largest sources of criteria pollutants when compared to the 210 point sources in Warren County and the surrounding counties of Frederick, Clarke, Loudoun, Fauquier, Shenandoah, Page, Rappahannock, and the city of Winchester.

**Criteria Pollutant Rankings based on 2001 Point Source Emissions data  
from VA DEQ and CPV-Warren estimated emissions from draft permit.  
(in tons per year)**

<b>Rank</b>	<b>Facility</b>	<b>Locality</b>	<b>NO2</b>
1	Global Stone Chemstone Corporation	Shenandoah County	282.87
2	Global Stone Chemstone Corporation	Frederick County	236.31
<b>3</b>	<b>CPV-Warren Power Plant</b>	<b>Warren County</b>	<b>152.80</b>
4	America Online Incorporated	Loudoun County	85.79
5	Johns Manville International Inc	Shenandoah County	32.86
6	Mountain View Rendering Company	Shenandoah County	21.93
7	VF Jeanswear - Wrangler	Page County	18.12
8	Dominion - Remington	Fauquier County	17.86
9	Superior Paving Corp - Leesburg Plant	Loudoun County	15.26
10	Valley Proteins, Inc.	Frederick County	14.87

Rank	Facility	Locality	SO2
1	Global Stone Chemstone Corporation	Frederick County	302.99
<b>2</b>	<b>CPV-Warren Power Plant</b>	<b>Warren County</b>	<b>24.60</b>
3	America Online Incorporated	Loudoun County	16.87
4	Bow man Apple Products Co Inc	Shenandoah County	14.95
5	APAC Virginia Inc	Loudoun County	10.30
6	APAC-Virginia Inc	Warren County	9.26
7	Stuart M Perry Incorporated	Frederick County	8.61
8	Mountain View Rendering Company	Shenandoah County	8.60
9	VF Jeanswear - Wrangler	Page County	7.61
10	Warrenton Training Station B	Fauquier County	6.86

Rank	Facility	Locality	PM10
<b>1</b>	<b>CPV-Warren Power Plant</b>	<b>Warren County</b>	<b>134.60</b>
2	Johns Manville International Inc	Shenandoah County	74.23
3	Global Stone Chemstone Corporation	Shenandoah County	59.28
4	Tyson Foods, Inc.	Shenandoah County	45.67
5	Stuart M Perry Incorporated	Frederick County	30.82
6	Miller Milling Co	Frederick County	25.77
7	Plumly Lumber Company	Winchester City	22.10
8	Riverton Corporation	Warren County	19.67
9	Global Stone Chemstone Corporation	Frederick County	18.63
10	Stowe Woodward Company	Frederick County	17.35

Rank	Facility	Locality	CO
1	Global Stone Chemstone Corporation	Shenandoah County	217.46
<b>2</b>	<b>CPV-Warren Power Plant</b>	<b>Warren County</b>	<b>101.00</b>
3	Johns Manville International Inc	Shenandoah County	63.27
4	Superior Paving Corp - Leesburg Plant	Loudoun County	35.62
5	Riverton Corporation	Warren County	34.32
6	Merillat Industries Inc	Shenandoah County	26.00
7	Columbia Gas Transmission Corp	Loudoun County	17.41
8	Toray Plastics	Warren County	13.33
9	Plumly Lumber Company	Winchester City	12.24
10	National Fruit Product Co Inc	Winchester City	11.01

Rank	Facility	Locality	VOC
1	Pactiv Corporation	Frederick County	559.49
2	Merillat Industries Inc	Shenandoah County	330.11
3	Crown Cork & Seal Co Inc	Frederick County	269.57
4	PolyOne Engineered Films, Inc.	Winchester City	206.09
5	Insulated Building Systems Inc	Frederick County	112.00
6	Federal-Mogul Friction Products	Winchester City	98.31
7	E I DuPont de Nemours & Co Inc - Front Royal	Warren County	95.11
8	Seaward International Incorporated	Frederick County	89.92
9	Lear Corporation - Strasburg	Shenandoah County	67.98
10	Tuscarora Incorporated	Loudoun County	62.57
11	Henkel-Harris Co Inc - South Pleasant Valley Road	Winchester City	52.16
12	Berryville Graphics	Clarke County	46.73
13	General Electric Company, Winchester Lamp Plant	Frederick County	39.20
14	TREX, LLC	Frederick County	36.15
15	Howell Metal Co	Shenandoah County	33.86
<b>16</b>	<b>CPV-Warren Power Plant</b>	<b>Warren County</b>	<b>23.40</b>

## PROMISES

While we applaud some of the extra steps that CPV has taken, especially the huge reduction of required fresh water resources, we feel that CPV representatives have made several promises that the company may not be able to keep.

### Facility will not replace dirtier coal-fired power plants

Mr. Thomas Eiden, CPV-Warren Vice President for Project Development has commented that the CPV-Warren facility “will help to displace more polluting and less efficient sources of electricity.”<sup>12</sup> We seriously doubt that these “more polluting and less efficient” facilities and companies are going to step aside and reduce their power and profits. In fact, the opposite has been proven over the past 40 to 60 years. The exception would be the Virginia Power Possum Point facility, which is converting from coal to gas, in the severely impacted ozone non-attainment area of Northern Virginia. The antiquated coal-fired power plants in Virginia keep chugging along with no guaranteed plans of either power or pollution reductions. The Bush Administration’s decision to weaken air pollution regulations will keep the old polluting power plants around even longer. As the Wall Street Journal reported, old power plants will no longer have to do costly upgrades and can undercut newer, cleaner plants that have high capital costs.<sup>13</sup>

### NOx offset condition needs to be in the PSD permit

CPV officials have stepped forward, after the State Corporation Commission public comment period, by volunteering to include NOx offsets for the Warren County facility. Once again, this offers great promise, but more details are needed to determine if this is possible. For instance, to the best of our knowledge, CPV has not publicly announced where these offsets will be obtained.

<sup>12</sup> Report of Alexander F. Skirpan, Jr., Virginia SCC Hearing Examiner, Nov. 24, 2002, p. 12

<sup>13</sup> “Electric Industry Capacity Glut Jolts Investors”, Wall Street Journal, Rebecca Smith, Nov. 11, 2003



CPV-Warren has stated that they are willing to do NOx offsets at a ratio of 1.15:1.0, thus the company would need to acquire 175.7 tons per year to offset its emissions. There are no qualifying facilities in Warren County and very few exist within an approximate 50-mile radius.

**Point Sources emitting at least 175 tons per year of NOx and located within approximately 50 miles of CPV-Warren**

<b>West Virginia 1999 emissions - source EPA</b>		
<b>Facility</b>	<b>Locality</b>	<b>NOx TPY</b>
Mount Storm Power Plant	Grant Co, WV	38,631
Capitol Cement Corporation	Berkeley Co, WV	3,412
North Branch Power Station	Grant Co, WV	1,023
Columbia Gas - Lost River Cs	Hardy Co, WV	731
Corning Consumer Products Company	Berkeley Co, WV	451
Greer Lime Facility	Pendleton Co, WV	226
<b>Virginia 2001 emissions - source DEQ</b>		
<b>Facility</b>	<b>Locality</b>	<b>NO2 TPY</b>
Dominion - Possum Point	Prince William County	6,022
Potomac River Generating Station	Alexandria City	5,918
Transcontinental Gas Pipeline Sta 180	Orange County	2,332
Covanta-Fairfax	Fairfax County	1,832
Covanta Alexandria/Arlington, Inc.	Alexandria City	564
Transcontinental Gas Pipeline-Station 185	Prince William County	413
Global Stone Chemstone Corporation	Shenandoah County	283
Global Stone Chemstone Corporation	Frederick County	236

Our concern is that this NOx offset offer has been used to possibly gain the support of community leaders and the general public. While we don't want to question the sincerity of the company, we do have our doubts that these offsets will be obtained. VA DEQ needs to add the offsets in the PSD permit to ensure enforceability and to prevent further deterioration of the area's air quality.

The Warren County Board of Supervisors did include the NOx offsets as part of a list of permit conditions for the facility when they adopted a Conditional Use Permit on Dec. 21, 2001. This Conditional Use Permit states:

**Condition VII – Environmental**

3. To the extent permitted by and consistent with the rules and regulations of the Virginia Department of Environmental Quality and/or the United States Environmental Protection Agency, CPV shall agree to obtain allowances and/or offsets for NO<sub>x</sub> emissions modeled to benefit Warren County that are as close to the plant as practical. Documentation providing evidence of available emissions allowances/offsets and those purchased/traded shall be provided to the County Administrator and the Board of

Supervisors. These offsets have been voluntarily proffered by CPV to reduce NO<sub>x</sub> emissions within the region within which Warren County is located.<sup>14</sup>

VA DEQ does have the authority to impose and enforce this NO<sub>x</sub> offset. Especially since the company has voluntarily committed to this requirement, VA DEQ should have no problem with adding this condition to the PSD permit.

9 VAC 5-80-1760 already provides a provision to comply with local zoning requirements:

9 VAC 5-80-1760. Compliance with local zoning requirements.  
The owner shall comply in all respects with any existing zoning ordinances and regulations in the locality in which the source is located or proposes to be located; provided, however, that such compliance does not relieve the board of its duty under 9 VAC 5-20-140<sup>15</sup> of these regulations and § 10.1-1307 E of the Virginia Air Pollution Control Law to independently consider relevant facts and circumstances.

In addition, 9 VAC 5-170-160 allows such conditions and adds enforcement:

9 VAC 5-170-160. Conditions on approvals.  
A. The board may impose conditions upon permits and other approvals which may be necessary to carry out the policy of the Virginia Air Pollution Control Law, and which are consistent with the regulations of the board. Except as otherwise specified, nothing in this chapter shall be understood to limit the power of the board in this regard. If the owner or other person fails to adhere to the conditions, the board may automatically cancel the permit or approvals. This section shall apply, but not be limited, to approval of variances, approval of control programs, and granting of permits.

In addition, 9 VAC 5-80-1950, 9 VAC 5-80-1180 D would add enforcement to the condition.

In addition to the unknown source for the NO<sub>x</sub> offsets, we have no idea if these would truly be offsets. Hypothetically, there is a possibility that if a facility is permitted a higher NO<sub>x</sub> cap than the facility emits, then the area will still have an increase in NO<sub>x</sub> pollutants. In other words, we don't know if these offsets would be taken from actual emissions or from the permitted emissions. Thus, making the offset worthless. Location, modeling and the scope of the analysis are also factors to be considered.

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<sup>14</sup> CPV Warren, LLC Conditional Use Permit adopted by the Warren County Board of Supervisors on Dec. 21, 2001.

<sup>15</sup> Note: VA DEQ regulations mention that VAC 5-20-140 has been repealed, however that has no effect because adding this condition to the PSD permit would not impact the Board's authority.

## PERMIT CONDITIONS

In addition to a NO<sub>x</sub> offset condition in the PSD permit, DEQ needs to add or amend the following conditions:

- Under Operations/Emission Limitations, page 4: a requirement for fuel throughput needs to be added. This should include a (amount of million cubic feet) limit on the consumption of natural gas per year, per 9 VAC 5-80-10, 9 VAC 5-50-260. This should include combustion turbine generator (CT1 & CT2) and the heat recovery generator with duct burner (DB1 & DB2).
- Under Emission Limits (P2), condition 27, page 9: The emission limits for the emergency generator (EG2) appear to be very high, especially when compared with some other recently permitted gas-fired power plants. We feel the short-term NO<sub>2</sub> 34.0 lbs/hr limit should be substantially lower. Also, the CO 12.8 lbs/hr could be lower.
- Under Visible Emission Limit, condition 18, page 8: While there are several gas-fired power plants in Virginia with the 10 percent opacity limit, we are aware of at least one permitted facility with a visible emission limit of 5 percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity.<sup>16</sup> We request the opacity limit be more stringent at 5 percent, especially considering the location of this plant.
- Under Emission Controls: BACT analysis for PM-10 controls dismissed baghouses, scrubbers, and electrostatic precipitators as “not generally considered feasible”. While VA DEQ has not included PM-2.5 emission data, most likely that figure is close to the PM-10 emissions. Gas-fired power plant combustion produces particulates at the lower end of the PM-2.5 range. This range is believed to be the most dangerous to health and is also most effective in producing haze and reducing visibility. We feel that a thorough cost and feasibility analysis should have been completed to ensure that a feasible pollution control, such as drift eliminators and the other controls mentioned above, is not available, per 9 VAC 5-80-1800 B et al. By emitting 134.6 tons per year of PM-10, this will be the largest point source of particulates in the area.

## STANDARDS AND MONITORS

We feel that now is the time to address the new ozone 8-hour standard and the Particulate Matter 2.5 standard. These health standards are not currently being addressed by VA DEQ.<sup>17</sup> In a November 2002 letter from EPA to Regional Air Division Directors, the Agency “encourages States to take early action to reduce emissions of pollutants that cause violations of the NAAQS for ozone (the 8-hour standard) and PM 2.5 and that cause regional haze”.<sup>18</sup>

VA DEQ has a misleading habit of stating that an area is in attainment for a particular pollutant, when actually the area is not being monitored. There is a huge difference, especially in this instance. In Warren County, there are no monitors for ozone and PM 2.5 pollutants. The only

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<sup>16</sup> Henry County Power, LLC VA Registration No. 21389, permit granted 11/21/02

<sup>17</sup> BREDL comments on VA DEQ – VA SCC Memorandum of Agreement, July 9, 2002

<sup>18</sup> EPA letter to Regional Air Division Directors, Nov. 18, 2002

(<http://www.epa.gov/ttn/naaqs/ozone/ozonetech/o3imp8hr/o3imp8hr.htm> #15a)

criteria pollutant monitor in Warren County is for PM 10. During the ozone season, it is interesting to observe EPA air modeling based on the existing ozone monitors. During high ozone days, many areas and counties are indicating high ozone. Not just the monitored areas. Adjacent areas are having air quality problems. The lack of monitors does not decrease ozone formation. Likewise, the adjacent areas of Northern Virginia that have monitors, which show a severe ozone problem, will be impacted with additional pollution.

Once again, it is obvious that Yes, Virginia, we do have an air quality problem. And, No, Virginia, more sources of emissions will not make it go away.

## **MORE POWER IS NOT NEEDED**

Besides the location of this facility, the fact that the power from this proposed facility is not needed is an obvious reason why CPV-Warren should not be constructed. According to an article by The Wall Street Journal, the U.S. electric power industry has added far more generating plants than will be needed for years.<sup>19</sup> In the continental U.S., capacity has increased by 24 percent at a time when demand has flattened out, according to the article. It went on to state that no region has a greater surplus of electrical capacity than the Southeast. Even if other areas wanted this surplus, there isn't enough space on transmission lines to move it.

## **IN CLOSING**

We thank the Virginia DEQ for making the draft permit and other materials available on its website during the public comment period. We also appreciate the lower short term NOx rate of 2.0 ppmvd which is in the draft permit. However, it really doesn't matter how clean this plant intends on being – it simply is a facility that should not be located in this area.

BREDL and VAFW urge Virginia DEQ to consider these significant impacts for the proposed CPV-Warren facility. Additional emissions of criteria pollutants and hazardous air pollutants will not alleviate Virginia's ongoing air quality and acid rain problems nor the human health and other environmental problems associated with air pollution. Virginia DEQ has the authority to make the right decision of refusing to permit this significant source of air pollution in an already heavily polluted area. Therefore, **we respectfully request the VA DEQ to deny the CPV-Warren air permit as drafted.** Thank you for this opportunity to comment.

Respectfully submitted,

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<sup>19</sup> "Electric Industry Capacity Glut Jolts Investors", Wall Street Journal, Rebecca Smith, Nov. 11, 2003

## **Air Pollution & Health Impacts**

EPA scientists urge the government to consider imposing stricter limits on the level of particulate matter 2.5 in the nation's air because evidence shows that PM 2.5 contributes to sickness and death at its current level. – Sept. 2003

Researchers at St. Mary's Hospital in Portsmouth, England found that while most asthma attacks suffered by children are related to viral infections, they are more serious if the child has been exposed to nitrogen dioxide from ordinary traffic pollution. – June 2003

Canadian scientists published information indicating that air pollution is most likely the reason behind gene mutations of herring gulls near steel mills in Hamilton, Ontario. The scientists were able to duplicate the mutations in mice based on air quality. The researchers expressed concern that these mutations may also occur in humans. – Jan. 2003

UCLA School of Public Health research has shown that people living or working near major freeways are exposed to 30 times the concentration of dangerous particles from motor vehicle emissions. - Oct. 2002

Long-term exposure to air pollution significantly raises the risk of dying from lung cancer. Brigham Young University and New York University researchers found that for every 10 micrograms of fine particulate pollution, lung cancer increases 8 percent and heart and lung related causes increase 6 percent. - March 2002, JAMA

Air pollution causes the blood vessels of healthy people to close up which may cause heart attacks and other cardiovascular problems, according to University of Michigan and University of Toronto researchers. - March 2002, JAMA

Air Pollution may cause asthma, according to University of Southern California researchers. For the first time, researchers have shown that children breathing heavily polluted air are more likely to develop asthma. - Feb. 2002

Korean researchers and the Harvard School of Public Health concluded that air pollutants are significant risk factors for acute stroke death. Deaths in Seoul between 1995 and 1998 increased consistently with rising concentrations of fine particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide or ozone. – Feb. 2002

Cleaner air improves children's lung function, according to researchers at the University of Southern California. - Dec. 2001

Ozone pollution increases school absenteeism because of respiratory illnesses, according to University of Southern California researchers. - Dec. 2001, Epidemiology

Smog is harmful to babies and fetuses causing stillbirths, infant deaths, and low birth weight, according to UCLA researchers. - Dec. 2001, Epidemiology

Playing sports in high ozone areas may increase asthma risk, according to a study presented for the American Thoracic Society. - Summer 2001

A change in traffic patterns to reduce congestion for the 1996 Summer Olympics in Atlanta significantly decreased the number of asthma acute care events by over 41 percent. - Feb. 2001 JAMA

Air pollutants slow children's lung development over time, according to University of Southern California researchers. - Oct. 2000

Children who live near heavily traveled roads and highways are at greater risk of developing cancer, including leukemia, according to a study conducted by the University of Colorado. - March 2000