COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

West Central Regional Office
3019 Peters Creek Road, Roanoke, Virginia 24019
Telephone (540) 562-6700, Fax (540) 562-6725
http://www.deq.state.va.us

Dennis H. Treacy
Director

Richard F. Weeks, Jr.
Regional Director

June 22, 2001

Mark Barker
SW Virginia - Vice President
Blue Ridge Environmental Defense League
1828 Brandon Avenue, S.W.
Roanoke, VA 24015

American Electric Power – Glen Lyn
Phase II Acid Rain Permit Amendment
Registration No. 20460

Dear Mr. Barker:

The West Central Regional Office of the Virginia Department of Environmental Quality thanks you for your participation in the public review process for the above-named acid rain permit amendment. We have received and reviewed your comments and have prepared the attached document which summarizes the comments received and the Department's response.

One revision was made to the draft permit dated January 5, 2001, correcting the SO_2 allowances for Unit 52. The revised permit was issued on June 22, 2001.

Again, thank you for participating in the public review of this permit action.

Sincerely,

Steven A. Dietrich

Steven A. Dietrich
Air Permit Manager

Enclosure
cc: DEQ - File

AEP - Glen Lyn Acid Rain Permit Amendment
Summary of Public Comments and DEQ Responses
June 22, 2001

Comment 1:

Commenters are concerned about the gradual increase in annual Nox emissions over the last decade, and the proposed increase in hourly potential emissions.

DEQ Response:

The three units were constructed in the 1940s and 1950s, prior to state or federal air pollution permitting regulations, and have never been modified so as to trigger a stationary source permit. Therefore the facility has had no NOx emission limits or coal throughput limits until recently, and in fact would have violated no state or federal standard by operating every hour of the year at 100% capacity.

The NOx portion of the federal acid rain program, as mandated by Congress, is based on emission **rate** limits (lbs/million BTU) rather than mass emission limits (tons per year). These limits differ depending on the type of boiler. The first NOx limits to apply to the facility were the early election limits which came into effect as of January 1, 1997. By opting to limit NOx emissions from Units 51 and 52 (tangentially fired boilers) prior to January 1, 2000, AEP was allowed a limit for those two units of 0.45 lbs/million BTU, rather than the more stringent standard limit of 0.40 lbs/million BTU which would have otherwise applied. For Unit 6 (a dry bottom wall-fired boiler), AEP did not opt for early election and so would have been subject to the standard limitation of 0.46 lbs/million BTU as of January 1, 2000.

However, also on January 1, 2000, acid rain sources became eligible to include units in a NOx emissions averaging plan. Under such a plan, the BTU-weighted annual emission rate for the group as a whole takes precedence over the individual unit limits; as stated in 40 CFR 76.11(d)(l)(ii)(C), "If there is a successful group showing of compliance … for a calendar year, then all units in the averaging plan shall be deemed to be in compliance for that year with their alternative contemporaneous emission limits and annual heat input limits ...". AEP therefore submitted a revised Phase II NOx Compliance Plan and NOx Averaging Plan for a number of facilities in a multi-state area for the year. Glen Lyn is the only AEP facility in Virginia for which alternative contemporaneous emission limits (ACELs) above the aforementioned permitted limits were requested: 0.47 lbs/million BTU for Units 51 and *52,* and 0.70 lb/mmBTU for Unit 6. This of course increases the hourly potential to emit for Units 51 and 52 by 0.02 lbs/million BTU over the 1997 limit. For Unit 6, however, this is not the case, since the averaging plan became an option for AEP on the same date the standard limit would have been effective.

It should be noted that the averaging plan, and therefore the proposed permit, requires for the first time an upper limit on heat input (in millions of BTUs) and therefore on the amount of coal used and number of hours of operation. This is primarily for the purpose of determining, in the event the overall emission rate of 0.61 lbs/million BTUs for **all** units in the plan is exceeded, which unit is causing the exceedance. However, this limit on coal throughput can potentially offset the increased emission rate limits, resulting in decreased emissions in tons per year. (See further discussion following Comment 4, below.)

Comment 2:

Although proposed NOx emissions increase may be offset over the multi-state averaging plan, commenters are concerned about short- and long-term impacts to the local area and feel that the averaging plan fails to protect public health in Giles County and surrounding areas. They are also concerned about haze from airborne particles due to stagnation periods, further deterioration of the James River Face Class I area and additional ozone concentrations in the region.

DEQ Response:

Screening modeling was conducted by the DEQ to determine the ambient impact of the proposed changes. This conservative model predicted a total annual impact (including background) of 95.07 micrograms/cu. meter, which is beneath the primary and secondary national ambient air quality standard (NAAQS) of 100 micrograms/cu. meter. Primary standards are defined as levels which, allowing an adequate margin of safety, are necessary to protect the public health. Secondary standards are necessary to protect the public welfare from adverse effects associated with the presence of such air pollutants.

The averaging plan is a part of the federal acid rain program, and AEP's request was reviewed by the EPA. While visibility and ozone are not the focus of the federal acid rain provisions, AEP remains subject to the federal NAAQS for ozone (235 micrograms/cu. meter) and Virginia's Emission Standards for Fuel Burning Equipment (9 VAC 5-40-880 *et seq.)* which limit particulate and visible emissions.

Comment 3:

Modeling concerns:

- **Virginia DEQ or EPA should place a NOx monitoring device closer to the Giles County area than the Vinton monitor**
- **The modeling report did not include impacts to bordering West Virginia.**
- **The screening model does not take into account the proximity of other large pollution sources, such as Duke Power's plant in Winston-Salem.**

DEQ Response:

The background impact from the Vinton NOx monitor (26 micrograms/cu. meter) was added to the impacts predicted by the screening model in order to account for surrounding pollution sources. While a Giles County monitor would better reflect nearby sources, it is not possible to place monitors at every location for which modeling is conducted. Federal New Source Review requires placement of site-specific monitors in addition to the statewide network in some limited circumstances, but no such permit has been applied for in the Giles County area. West Virginia has itself issued permits to units participating in the averaging plan and was notified of the proposed Glen Lyn permit. To our knowledge, no modeling was conducted by West Virginia or any other state in which such units were located.

Comment 4:

Assuming continuous operation using proposed NOx rates, annual NOx emissions would increase to 8609 tons.

DEQ Response:

The units will not be operating continuously. The proposed permit includes annual heat input limits (in millions of BTUs), thereby limiting the number of hours of operation to fewer than 8760 hrs/yr, since boiler capacity is in terms of BTUs of input per hour. For the year 2000, Units 51 and 52 are each limited to 3,146,000 million BTUs/yr (the equivalent of 5500 hrs of operation per unit), while Unit 6 is limited to 14,307,000 million BTUs/yr (the equivalent of 7013 hrs of operation), resulting in potential emissions of 6486 tons. For the year 2001, AEP has requested that Units 51 and 52 each be limited to 1,129,000 million BTUs/yr (the equivalent of 1974 hrs of operation per unit) and that Unit 6 be limited to 12,755,000 million BTUs/yr (the equivalent of 6252 hrs of operation), resulting in potential emissions of 4995 tons.

Comment 5:

The three units would emit 1,780 more tons of NOx per year under the proposed permit.

DEQ Response:

This number reflects a comparison of the proposed permit with AEP's 1998 permit, which included the limits which would have applied to Unit 6 as of January 1, 2000 (0.46 lb/mmBTU, as opposed to 0.50 lb/mmBTU had it opted for early election). However, Unit 6 (which accounts for 1,717 tons of this number)

has never been subject to this limit; see discussion under Comment 1, above. In the five years 1995 through 1999, the average annual emission rate for this unit has ranged between 0.524 and 0.659. Up to this time only the emission rates from Units 51 and 52 have been limited, as of 1997. As discussed earlier, there has historically been no limitation on the potential to emit for any of the units and they could be operated at 100% capacity, every hour of the year, so long as they did not exceed the early election limits for Units 51 and 52 (0.45 lbs/million BTUs). Under the proposed permit, the emission rates would increase to 0.47 for Units 51 and 52, and be set at 0.70 for Unit 6, but there will also be an upper limit on the hours of operation (again, in terms of millions of BTUs).

Comment 6:

Will more or less monitoring be required under the new permit, and how often will the permittee perform ambient monitoring?

DEQ Response:

No changes to monitoring will result from this permit. AEP is still required to have a continuous emissions monitor for NOx, as required under the acid rain program, and to provide quarterly reports of hourly average emissions to the DEQ.

Comment 7:

The permit must include information listed under 40 CFR 76.9 (c).

DEQ Response:

The Phase II NOx Compliance Plan including this information was submitted as part of AEP's application, as was the Phase II NOx Averaging Plan. Both are included with and are considered part of the permit. (See "Permit consists of …" on first page of permit.)